WHISPERS FROM THE FLEET

BY
REAR-ADMIRAL
SIR CHRISTOPHER
CRADOCK

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"We're all alive!"

WHISPERS FROM THE FLEET

By

REAR-ADMIRAL
SIR CHRISTOPHER CRADOCK, K.C.V.O., C.B.

Author of "Sporting Notes in the Far East," Etc.

SECOND EDITION

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TO HIS MAJESTY THE KING.

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VK
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1908

With good will to the

SIX HUNDRED AND FIFTY CADETS

who were shipmates with me in the

OLD "BRITANNIA," 1896—99.

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Second Edition.

H.M.S. "SWIFTSURE,"
Channel Fleet,
1908.

ENCOURAGED by the indulgent attitude of my brother officers towards my late effort, in conjunction with the kind comments of the Press ; I have ventured to bring out this second, and generally enlarged edition of "WHISPERS FROM THE FLEET."

The chief additions comprise a "Chapter Concerning Midshipmen," and an increase to the "Remarks on Steam Evolutions," and as I have been questioned, more than once, why there was but little mention of Gunnery in my first volume, there will now be found a few pages set apart for some "Hints" on that subject by Lieutenant H. Stirling Lecky of this ship,—as being no expert in that most important branch, I have not dared to plunge unsupported into an element in which I should be straightway choked by the knowledge and utterances of many competent authorities, and the shoemaker should stick to his last.

Nevertheless whilst on the above topic, I can make the perhaps needless assertion, that the Navy fully recognizes that the Art of Gunnery is now far more vital to the Fleet than in former times.

The conditions of sea fighting have indeed much altered since the old days, principally necessitating a very high

standard in heavy gun shooting ; but in spite of this, and all other changes, we still believe that history will surely come home once more ; and that the main issues of the battle will be neither to the guns, the ships, the torpedoes nor the engines, *but to the men* ; when light hearts combined with determination—the latter virtue being perhaps rather more sustained nowadays—will, as in times gone by, carry it through. And as a happy illustration, and an opinion, on a 'prelude to an action', let me call to mind a discussion which occurred a few years ago between some senior officers as to what they would do, or say, to a ship's company previous to proceeding into battle. One Captain suggested one thing, and another something different ; but my man—he is a Vice-Admiral on the active list now—quietly remarked. —"I would order the men aft.—I would man the nettings, and I should say to them.—Here my lads !—Do you see your opposite number? Now !—If I find any of my ship's company ill-treating the prisoners, they shall be well served with No. 10A."—Surely an excellent spirit in which to send the men grinning to their quarters.

Through the book an extra story or two, which—like the former ones—have come under my personal ken, are let loose on the public.

For the illustrations I am much indebted to the facile pens of my friend Lieutenant K. Brounger, and the late much regretted Lieutenant P. Pontifex.

C.C.

INTRODUCTION.

THIRTEEN years ago when the spars of a past Navy were but too surely tottering, I ventured to publish a little volume on the fast disappearing Art of Seamanship, with the wish to try and help a younger generation to cut their teeth, and struggle through a theoretical examination on a subject which could only possibly be acquired by constant practice, combined with ocular demonstration. Unfortunately at the time, owing to the transient state of the Service, the above conditions were becoming day by day harder to find, and such being so, the Seamanship Examination for the Rank of Lieutenant (under the old lines) soon became a farce, and has rightly been swept away.

Yes !—All is changed now.—The sticks are no more —snapped off short by the cap. The muslin is split and blown to the winds, and in the wreck with them has vanished for ever the remains of a picturesque Navy.

Also—alas !—has followed the utility (poor as it might be) of my wee book ; and consequently I have stood off on a fresh tack, and once more, with much temerity, fought a single action with a publisher to produce these "Whispers from the Fleet."

Those who may chance to honour my halting Whispers, will probably say of the good.—"Why I knew all this before!" And of the bad they will exclaim—"What rubbish, it's not worth printing!" Nevertheless kind friends, who knows? Perhaps some 'Simple Idea' depicted here may one day help you in a long ship in a tight hole.

It is our privilege to strongly criticise in this most public Service of ours, where few things can be private; but bear with me:—I have only written from such experiences as I have gone through, and with the best will for the "Good of the Service."

I should have liked to say a word or two on Scouting and Strategical Manœuvres (from observations gathered in the fleet), but it would have entailed confidential matter and was therefore out of the question; but giving my opinion for what it is worth, I maintain that practice will always beat theory; and as time goes on, nowhere will this be more clearly demonstrated than in Battle Exercises; especially when you are possessed of that most advantageous factor, superior speed over your adversary *when sea room is limited.*

Again, I would 'submit'—as we say in the Navy—that future fleet actions will no more resolve themselves into a 'one man show', than did those fought in the days when our forefathers conquered. While to vanquish, and bring the affair to a neat conclusion, not only will the help of those burdened with responsibility be sought, but the undivided, and unselfish co-operation of *all* hands will be expected.

Neither have I written on, or attempted to mention Gunnery; all I would suggest is, that the whole question of the "Gunnery Might of the Ship" depends on three things:—

Firstly, "Control." Secondly, "Accuracy." Thirdly, "The Personal Element."—The first is no good without the second, and both are useless if the third is unsatisfactory—by which I mean, that (good as the officers and men assuredly are) the Condition of Temperament is not half enough studied in the Quarter Bill.

There is also that one maxim which we all know well, i. e.—When the guns are busy, treat the old junk kindly, and keep her head as steady as may be; for if large helm is on, the 'swing' makes just the difference in accuracy to the man laying his piece, as—for simile—would be your experience, between plastering grouse lazily leaving the heather on some sweltering August afternoon, and perhaps harmlessly combing the same birds' tail feathers as they pelt down wind a hundred miles an hour on a wild October day.

I would also hazard the opinion that the armoured bridge is far preferable to the conning tower; for the ship should be fought in war from the same position that the Captain manœuvres his vessel in the piping times of peace.—Of course I know that the 'extra weight argument' is against this idea; but such difficulties might be overcome, for most Captains now regard the conning tower (as it stands to-day) as a place *utterly unfitted* for the purpose for which it was built.—To enter it is *at once* a voluntary means of obscuring all-round-vision.

One word more to the youngsters.—You may safely bear in mind, that although the old art of the sailor has died away, still as long as wind and weather lasts, so assuredly will the seaman in command weather the lubber—be the vessel what she may. And here let me relate a little anecdote.

The captain of a destroyer, labouring in a heavy sea, was told by a senior officer by semaphore—"House your topmast." Back came an immediate reply—"Very well, thank you!" Don't smile, for the young officer is one of our smartest men—the *seaman's* instinct but for the moment was absent, and had it been present perhaps the signal would never have been made.

In conclusion.—We have lost our masts and sails—advance of science willed it—but I believe our personnel (after a few hard knocks) will prove as good as ever; and although the little story above might make an old salt wag his head and exclaim.—"The Service has *indeed* gone to the dogs!." Believe me sir, the main sheet, though in a different form, still drives the King's ships to windward.

C. C.

H.M.S. "Leviathan."

Simple Ideas on Handling a Ship.

I hastily preface this chapter with the following surmise :—After this book has seen the light of day, shall I on the first occasion of leaving or joining a fleet in my next ship make a hideous mess of it ?—It's more than likely, and would serve me right !

When slipping from a buoy, slow speed is of little use in backing and filling ; and when finally going ahead after slipping, whichever bow the buoy is on, give the ship opposite helm and swing the stern clear, meeting her again long before the buoy is clear of the stern—as a rule if the buoy is clear of the ship's side when opposite the fore bridge, and the right helm is on, the propellers are safe.

NOTE :—Before eventually ramming the steam on the engines to leave harbour, be sure that your stern hawser has gone, for it is related in recent history that a certain ship too anxious to get to sea, left her berth with a stern bollard bounding along the quarterdeck hard and fast to one of the wires.

On shoving off from a jetty—if stern first, bind the ship's bow in with a wire ; if the wire has to go to a bollard

ahead, get her stern off by going slowly astern, but if the bollard is abreast or abaft the stem move the engines ahead —the last method is the easiest, though the former one is sometimes thought the best as it does away with closing the jetty.

When trying to move a vessel's stern from rest with in-turning propellers, some men have an idea that if you want, say the stern to go to port, you should go astern with the port propeller (and *vice versâ* to starboard), with the notion of "clawing" her stern off—but I have never found it to act.

Recollect that it is never necessary to wait for a spring to tauten before stopping engines, for that is how it is carried away.

On leaving a jetty bow first, spring her bow off by going astern on a quarter hawser.

In going stern first out of an anchorage, remember it is always possible to straighten her up and point her stern, by going ahead with one propeller and stopping the other, but you must catch her and stop the engines before she begins to get a swing on. Bear in mind, that a ship that will perhaps not answer her helm in a calm with stern way and engines moving, will often do so when the propellers are stopped.

It is always as well to have a rough idea of the point where your ship pivots, and then you know how to judge for her tail.

On wishing to turn a ship on her heel in a fleet keeping her on the bearing and distance, first go full speed astern with the propeller on the side on which you require her head to come up, then *immediately* she begins to move, full speed ahead with the opposite engine; keep the inner propeller at full speed astern the whole time and work the other engine against it as required; and do not forget to stop both engines *before* you reach the required point according to the amount of swing the ship's head has.

The stern of a vessel fitted with a left handed single screw, will always move to starboard when going astern, and her head will also turn in the same direction when going ahead with the helm amidships.

When leaving an anchorage in a fleet and it is necessary to pass through an opening in a breakwater, never at once head your ship directly towards the aperture, but always a point or so one way or the other; for if you do, and one ship ahead of you gets into trouble, you are more or less helpless; for there is nothing to veer and haul on for moving your vessel's head in order to get away, or extricate yourself—if you move the engines ahead you will run into her before you gather enough way for your helm to act.

When slueing a vessel round in a berth to secure between two buoys, I think it is better not to have her tight by the head with the picking-up rope. Come into harbour with plenty of way on, and put the helm over finally *before you go astern*, and then her head will continue to come up with the swing after the engines are reversed. As soon as the ship is stopped, keep the inside propeller at full speed

astern, and work the ship round with the other engine by going full, half, or slow speed against it. Recollect that with stern way on ships, as constructed now, will always put their sterns into the wind, and this fact will often help you. In all vessels it is better *to get between the buoys at once* and turn the ship *afterwards*.

If wind is blowing, or tide is setting down your berth, and if space will admit, get your head past what will be your stern buoy before commencing to slue, for you will be set down fast enough. There is nothing like having plenty of boats down.

In making a ship's stern fast to a bollard, or buoy, in a berth with a long drift, do not commence to worry and struggle with a wire, but run a grass line out first with a leading block, and haul out the 6 in. hemp through it to hold her. This done, send the wire, using more than one boat to buoy the bights (in this particular evolution nothing illustrates better the utility of supporting boats), and when the wire is fast, come well astern in the ship till the stern wire has been shortened in to the required drift, then on second wire (if required), equalize, and finally heave in forward to all parts.

When anchoring and securing with stern to the shore, anchor *well ahead* of your berth, veer rapidly and go astern; poke her stern into the required place, secure the stern hawsers and then tauten all up by shortening in the cable.

When running alongside a mole, as you come down to your berth it is extraordinary how the unpracticed eye is deceived, i.e.—You think you will be much farther away from

the mole when opposite your position than is actually the case. By far the best method to pursue in this evolution is *not* to stop the ship parallel to the jetty, but to put her nose right in, and get the head rope on shore and secured—and as soon as possible afterwards the stern hawser. Once fast, the ship can be breasted to either with the engines (the quickest method) or by heaving round the capstans. To bind the ship to with the engines, move them very slowly first ahead and then astern, and as the hawsers alternately take the strain and pull her in, gather in the slack when the tension is off, take a turn, and look out for the next pull—great care is required in working the engines.

On transporting a ship along a jetty without steam, the farther ahead—in the different "fleets"—the foremost wire is secured the better. The whole art in transporting is the *working of the after wire*, viz:—Keeping it sufficiently slack to allow the ship to move ahead and not be bound against the fenders, but at the same time taut enough to prevent her stern swinging too far off, and also to check way when required. The bights of the breast ropes should always be carried along the jetty ready to drop over the bollards immediately, if it is necessary to bring the ship up in a hurry —you have only to do this evolution in a high wind *off the jetty*, to realize how quickly control may be lost.

Plenty of boats should always be down when coming to a jetty, and they must be careful not to get cut off and nipped between the ship and fenders; all men on the jetty should also have their boots on and move at their best pace—a smart ship will have one brow at least on board, or any-

how hung, long before the ship is secured. When securing hawsers for a full due, remember the give and take for the rise and fall of the tide.

And now I wonder if this little soliloquy of mine will be taken amiss. Putting rashness on one side as unforgiveable, I often think whether taking *any risk whatever* in these big and valuable ships of ours is justfiable. It is no crime to crawl about in your vessel, but if the Navy subsides into such ways in times of peace, where will the nerve be when war requires it, and how are the juniors to learn?

Of course the headstrong unthinking "dasher" is bound to come to grief before long. He is like the brave stranger who comes down to settle in a wired hunting country. He will ride like a black for one season—perhaps for two—but by that time his one or two cracking falls will have told their tale and bought their experience. He will say to himself—"Is it good enough?" and quietly subside into one of the still good men of the hunt *who knows his danger*. I believe in the fleet that there is such a happy medium and standard to gain as this, and I have in my eye one man who I have recently met at sea, in command of a battleship.—He is long and spare and wears an eyeglass. He knows his risks for he is clever and practical; and if ever opportunity offers, watch him you boys how he works his ship in the fleet, and when your turn comes, go thou and try to do likewise, and if you succeed, you will indeed deserve well of the Navy.

A few Remarks on Steam Evolutions.

It should invariably be thoroughly understood in every ship, whether she is in company with a fleet or detached, that her own officers are *always* responsible for her *safe navigation.* Therefore when in the line in cramped waters, do not *blindly* follow your leader under the supposition that because he may have safely passed foul ground ahead, you, perhaps some distance astern, are bound to do the same. For there is generally either tide, set, or wind to consider, and it is sometimes extraordinary how much the tail of a long line of ships may be deflected from its proper course by one, or a combination of these.

The same applies when entering, or leaving a harbour, or passing through the entrance of a breakwater—*Look out for your own navigation.*

One golden rule :—Remember your neighbour, and under *all* conditions, blow high, blow low, keep your ship's snout away from him and all other ships of the fleet. If in a tight hole and coming together appears inevitable, lay alongside—for rubbing sides never sank a ship and superficial damage can always be repaired.

On a fleet going to sea, when once a ship is away she should only use her engines sufficiently to keep her head pointed in the direction it was before the anchor was tripped till a further signal is made.

When a fleet is ordered to turn together to a certain point prior to proceeding out of harbour, no ship should commence to slue herself with the engines *till the signal is hauled down*: and she should at all times when turning endeavour to preserve her bearing and distance on her guide.

NOTE:—When turning your ship on her heel in a tideway, and there are other vessels, merchant ships &c, at anchor down stream, look out you don't drift athwart some hawse—it is astonishing how easily this may be done.

I believe it is an understood condition, that on a fleet preparing to leave an anchorage, it should never be turned to exactly the opposite point to which it came in, if the intention is to invert the lines and let the guides lead out; for if it is done, although the guides themselves as rearmost ships are happy enough, the waiting vessels in the columns are all jambed bow to stern and there is little room to get clear of the next ahead when their turn comes to go on.

One method that I have seen tried with great success for clearing a roadstead quickly of a large fleet, is to turn the battleships one way and the cruisers the other.

If you have at any time to go unexpectedly astern and there is a neighbour behind, show your cones astern *before you move the engines.*

When in line, turn in the wake of your guide not of your next ahead if he swings out or turns short.

When turning in succession, suppose the ship ahead of you does turn a little outside, but you turn correctly in the

wake of the guide, when that ship comes in again, it is not uncommon for matters to begin to fit a little close between his inner quarter and your bow—*You* must *not* ease your helm, stick to it for all you are worth, but you must reduce speed *if* necessary, and when doing so *again remember* your next astern.—The vessel edging into the line should be careful to increase speed—it is often forgotten.

In turning after an abnormally long ship—an eight point turn or more—let the first indication of the leading ship's kick get a little on your outer bow before putting your helm over; if following an ordinary vessel the time to alter is when the swirl just touches your stem.

On all occasions when turning after another vessel endeavour to get the turn well in hand, if your ship is inclined to turn short the helm can always be eased; but if the turn is made too late, the helm has to be put hard over, and when once it is there no more can be done.

By a dispensation of Providence ships always appear at sea to be much closer than they are, and it will give confidence to know that it must be the veriest duffer on the bridge who can manage to damage another ship in the line from directly astern, for the slightest touch of the helm will do the clearing.

Never be astern of station when in line ahead, or ahead of position in line abreast.

On a column increasing or reducing speed by signal or otherwise, work your revolutions with the directing ship, and do not wait to copy the movements of some dilatory vessel that may be ahead of you.

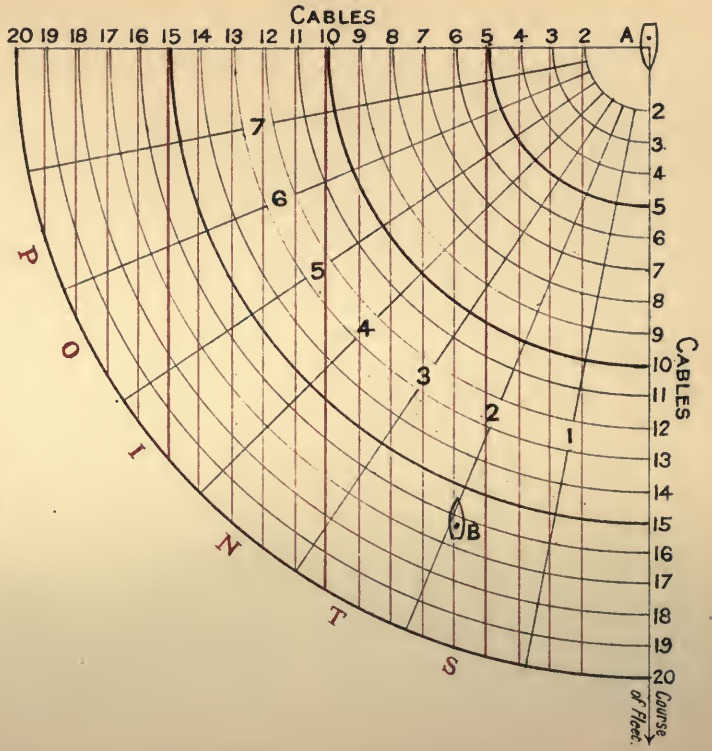
If steaming down on a bearing to close a column to take up a beam position, a good rough guide for the average battleship to follow for turning up is this:—For every point that the ship is keeping in, put the helm down fifty yards outside the correct distance required for station, i.e.—A ship keeping in two points to close to four cables, put the helm down four and a half cables off; or again, a vessel closing in four points to pick up a station of six cables on the beam, commences to turn up when seven cables distant from the ship she is forming on.

Never drop into your berth in a fleet underweigh by slowing down and edging in—much time is lost thereby and it is a most lubberly performance. Remember that a great help and *safety* in picking up your position is to have your bow, more or less, heading in the direction in which the fleet is steering before begining to close in the last five cables.—I say five cables because it is about the extreme turning circle of any class of ship.—I have seen endless vacillation over this evolution, sometimes entailing cutting through the line.

NOTE:—When taking up your berth in a line of ships which is already formed, be careful as you close the line, to note the course of the fleet in comparison with the direction of your own ship's ahead. There are often 'uncomfortable moments' occasioned over this simple 'position taking'; and they arise solely from the want of care in studying the compass. Good Sir! *Come in on the stern of the ship which lies ahead of your station*, and provided you are going fast enough, you cannot interfere with, or come to grief over, the ship next astern which is always the danger.

A Simple Diagram for determining the beam distance that one ship will pass another when steering parallel courses.

Example:- If A bears from B 2 points on the starboard bow when steering parallel courses and 16 Cables distant: B if he continues his course will pass A abeam at 6 Cables, whether he comes up from astern or down from ahead.



When taking up your position in the line from ahead, you can always roughly estimate the course that the fleet are steering by the relative angles of the masts—perhaps they are all in one and you then know at once ; this done, come swinging down on the opposite course (working out on my table given at the end of this chapter, how far you have to get over), and remember that when you put the helm over for the last turn, the ship you are forming on is moving ahead the whole time.

It is of use sometimes to remember that an ordinary battleship or cruiser takes roughly three minutes to make a sixteen point turn when proceeding at ten knots.

Recollect, and it is of much comfort, that as long as you keep your vessel just outside your tactical diameter from the column as you are coming down, that you *cannot run into the line* with the helm hard over, although by bad judgment you may turn up short or otherwise. Use *all* steam, for nothing looks worse, or delays a line more, than a vessel recalled to the flag 'dobbing' into her assigned position—and here one word to you marine artists.

It is your complaint, and it is also but too well known that our present steel-clad Navy gives but little scope for the brush in comparison with the picturesque wooden walls of olden days—but here let me give you a subject. The details can be but inadequately expressed by my poor pen, but your talent can improve and make a striking canvas.

The Scene :—A heaving unsettled sea, and away over to the western horizon an angry yellow sun is setting clearly below a forbidding bank of the blackest of wind charged clouds. In the centre of the picture lies an immense solitary cruiser with a flag—'tis the cruiser recall—at her masthead blowing out broad and clear from the first rude kiss given by the fast rising breeze. Then away, from half the points of the compass, are seen the swift ships of a cruiser squadron all drawing in to join their flagship :—Some are close, others far distant and hull down, with nothing but their fitful smoke against the fast fading lighted sky to mark their whereabouts ; but like wild ducks at evening flighting home to some well known spot, so are they, with one desire, hurrying back at the behest of their mother-ship to gather round her for the night. They are the eyes of a battle-fleet, which— a grey and mighty mass—lie far astern in the shadowy background. A destroyer—light as a gull on the water—sits at rest under the flagship's quarter. I wonder—Friend, Chevalier De Martino are my words too feeble ?

To continue :————

A cruiser watching a port, i.e.—standing in and out on a line of bearing—should *always* turn the same way when the sixteen point turn comes to be made, otherwise she will quickly get off her ground.

When closing to communicate with another vessel which is stopped, nothing looks better to others, or is more satisfactory to yourself, than that your ship should be nicely stopped at the right place—which means that the boat which

you are lowering should have as short a pull as possible. *But* you must always bear in mind that the bow of your ship must be *imclined out from the side of the other*, and also remember how big masses in water attract each other and suck together.

On running up alongside a ship, and the same applies to going to a jetty, as you draw up to the vessel ahead (till you are accustomed to it), you are likely to be deceived as to the distance you will be off when you arrive abreast, and you will find that you are nearly always *much closer* than you expected.

When turning to any position to join a division of ships under-weigh, or to pick up a line of bearing whatever it is, *always get your turn in hand*—it is simple enough to ease the helm, but if you have put it over too late in the first instance, *nothing* can rectify it but the use of the inner propeller which is very wrong and inadmissable—It's like the 'back' getting too far forward at polo, he can't get back however much he works his *screw*.

Never cut through a line or cross an Admiral's bows (however far off) without permission. And speaking of this takes me back to a celebrated signal that I saw made some years back in the Mediterranean to a perhaps rather hasty tempered Commander. His bug-trap has been ordered to take up a certain position in the fleet. It was her Captain's first essay in the work, and by some means he got mixed, with the result that his vessel quickly became for all the world like a rabbit that had lost his run after bolting from

some fast diminishing corn-field ; the only apparent difference being, that he was everywhere dodging ships instead of sheaves of corn, as he vainly searched for the safety of a hole of refuge. Headed in all directions, in desperation he eventually charged through the line and got happily to ground with a prayer that he had been unobserved—but alas, a ferret had seen him. Up flew the signal.—"What the devil do you mean by cutting through the line?" Doubtless in acknowledgement he should have 'submitted' and pleaded for mercy; but no, his dignity was injured and his ire raised, and so replied.—"Signal taken in and read, but third word not understood." Three words came back from the flagship.—"Devil! Devil! Devil!"—The fleet first gasped, and then choked.

It is well known (and provided judgment is also present) that the faster a ship is moving through the water the more easy is she to handle. Therefore when at work on any detached duty amongst the fleet, till that duty is completed, use the engines with the cone right up—giving plenty of helm, and if the eye is fairly correct, and the stomach also in good order, you cannot go far wrong.

To drop into close order (from rest) on a ship passing, you should go on her number of revolutions immediately her fore bridge and your after funnel are abreast.

When turning in on a guide to some bearing on her quarter or astern, remember when you put the helm over to reduce speed, and oppositely in going out on the bow or ahead to increase your revolutions.

The reciprocal ships in each column to the guide of the fleet, are the guides of the respective columns or divisions.

Any vessel which for the time is guide of the fleet, or on which other ships are forming, should be careful to steer her correct and careful course *with deviation applied*—this is often forgotten.

As a guide leading a division through a tideway, perhaps it is safer to put the ships of the column on a bearing from the guide, instead of allowing them to attempt to follow round in the wake of the next ahead; but in all cases every ship in the line should endeavour to pass over the *same ground, not water*, as her leader.

When forming astern of the guide—coming into harbour, &c.—do not imagine that by getting her masts in one you are directly astern of her, but get her bearing on and *keep there*; never mind what intervening ships may do; when she turns up on her correct course (having got her distance) you will find yourself nicely in station, and dead astern.

A ship forming into line on a guide from a bow, beam, or quarter bearing must conform, more or less, with the helm and speed of the ship next inside her (even if that interior vessel has not worked them quite correctly); and should never attempt to cut any corner that may have been made by the misjudgment of the inner ship, although she (the outer vessel) is being manœuvred accurately.

On turning out of line to pass other vessels ahead—exchanging position in the column, or else inverting—let

your ship run out one and a half points (it is quite sufficient) and then resume the original course, and be careful in the former case not to edge in too close to the bows of what will be your next astern.

Is is usual for ships exchanging positions in a line, for the leading ship to haul out to port and the rear to starboard.

On closing or opening on a line keeping the same relative bearing, one and a quarter points equals about one knot of speed when the average speed of the fleet is about ten knots.

When ordered to take station astern on any ship *at equal speed* from any bearing except directly ahead—If, when the signal is hauled down, you take the bearing of the foremast of the ship you are to form on and then steer that course, you will arrive in her wake at the same distance from her as when you started. Viz :— If from four cables on her quarter, you steer for the point where her foremast was when the signal came down, you would arrive in her wake four cables astern.

For short distances ; close in or open out by compass bearing—For long distances, use either the mooring board or Battenberg indicator, and remember that when opening or closing on the same bearing, position bars are not required.

When in close order in a single line of moderate length, and a signal is made to turn to a bearing on a certain ship,

the distance is too cramped for Battenberg to be much use,—judgment *alone* must come in, and look out you do not get outside your distance; also use your *utmost speed.*

On taking up a position on a certain vessel using Battenberg, remember to apply the bearings of that ship the *opposite* way on the instrument, also when altering course and taking up a new position (after course indicator is put to the new course), *add* the additional number of degrees to be altered to the number of degrees that the course has been changed by signal, which must be the direction you must steer to take up your new position :—These conditions often occur when a vessel already some distance ahead of a directing ship, has to take up a new position (also ahead) on that directing ship as she alters her own course from time to time.

NOTE:—It is easy to see that the ship at the far end of the radius must alter a larger number of degrees than the ship at the inner, or pivot end, if the two vessels are to constantly preserve their relative bearing when course is altered.

Remember that whenever any forming or disposing signal is being carried out amongst scattered ships, the *Rule of the Road governs all movements*, and nothing justifies your vessel getting to her position (however smartly) at the risk of her safety, or another's. A rough guide to turn up one division in the wake of another when coming in at right angles, is to haul the turning flag down when the rear ship bears two points on your bow.

A column is moved at a knot less speed than the maximum of the fleet.

It is quicker and easier to lead rear ships up to take station on ships ahead, than to move them up by taking ground together.

When a column of ships is forming on another column to prolong a line, it is sometimes better when the leader cannot see, to order one or other of the flank ships to work the turning flag.

When a number of divisions or sub-divisions are being exercised at equal speed manœuvres, it is not always advisable (for efficiency's sake) to shorten up some evolution—forming into line abreast &c.—by not turning the rear ships. The reason being, that it becomes impossible for the directing ship to observe all the intervals between vessels; and if a leading ship of one division is slightly ahead of station, and a rear ship of another is running up into line without being turned, in spite of all care these ships are apt to come very near a close embrace—if nothing worse. Again, it is better unless time is pressing, to let the line just settle before hauling the turning signal down; for if some rear ship has, say, her helm well over to port, and the flag comes down to tell her to turn to port she is bound to lose her station in the fleet.

Always remember the difference between "Leading Ships" and "Leader" or "Guide."

When wheeling in a fleet, the alterations of the different speeds of the columns are automatic and should take place without signal—the pivot ship must be careful to go on to the normal speed in plenty of time; the pivot ship reduces for any alteration over one point, the outer wing ship invariably increases to her maximum speed.

When wheeling in a fleet, put the Battenberg course indicator to the new course of the pivot ship at once, and then work out your own angle of wheel. With many, or long columns, the greatest care must always be taken by the leaders that their respective degrees of alteration are adhered to ; for if one leader through carelessness gets too close, when he inclines his line out again, his tail ships will fly into the rear of the next line, which will apparently be wheeling in the opposite direction—this has happened before now in a fog.

NOTE: All officers of the watches should consider it their primary duty to possess a thorough knowledge of the mooring board and Battenberg, the wheeling and forming table, ratio of speed, and definitions &c., and to constantly practice them by self-set problems.—The time taken by officers to fog out even the simplest solutions at sea is occasionally astounding.

When pressed for time and room (coming into harbour &c.), and you are waiting to make a decided wheel ; it often saves time and also helps the wheel, to put the leaders of the other divisions or sub-divisions as you steam up, so many points before, or abaft, your beam according to the direction in which the wheel is going to be made.

If the course of the fleet should be altered while a division is taking ground, it is a simple plan for the leader of that division to put his ships on the new bearing (i.e. the new course) from him ; but if they have not arrived in station when required to turn up, the leader should assume the new course and make the signal 'form in the wake of your next ahead.'

On altering course together in the fleet, do not let your vessel swing beyond her points.

Here is a rough scheme of helm angles for a long ship :—

Up to two points	...	fifteen degrees of helm.
Anything beyond two points		twenty five „ „

NOTE :—Excess of these angles or full helm may be used at any time to correct station or error of judgment ; but its practice should, if possible, be avoided.

When cruising at night without lights, the leaders of columns usually give but little helm—ten degrees or so.

Now might I be allowed to respectfully suggest that after a number of ships have been whirled about for some time, so many numeral points one way together, and then so many points together in other directions, they might be turned simultaneously to some compass point for a change—simply as a 'steadier.' I speak from a 'distracted Captain in the conning tower' point of view, and one who has always been bad at sums.

When moving a fleet in a fog and it becomes necessary to turn together, do not turn the ships so many numeral points to starboard or port, but instead to some *compass* point—it much lessens the risk of collision.

A fog buoy is towed a hundred fathoms astern from the taffrail ; ships in the line should close up in thick weather, and the place for the 'next ahead's' buoy should be opposite one side of the following vessel's fore bridge.

When signalling in a fog in a fleet composed of three columns, the signal runs down the centre column, up the starboard, and then up the port, when the sound will not interfere with what is going on in the starboard column.

An executive signal in a flagship, or guide, should always be *immediately* obeyed in that ship ; and if it is a matter of increase or decrease of speed, the ships in the fleet should at once alter to their corresponding revolutions without waiting for the speed flags or lights of the next in company to move.

It is generally understood in the fleet that quarter-line as a cruising formation is undesirable unless most accurate station is kept ; and at all times there is that danger present—especially in starboard quarter-line—of difficulty in carrying out the rule of the road with meeting or crossing vessels.

'Relative bearing'—Is that bearing which one ship bears in relation to another, i.e.—so many points abaft or before any of the cardinal points of that ship—bow, beam, or quarter.

'Compass bearing'—Is some constant bearing kept by one ship on another, which never alters however they may be twisted about.

'Reform' flag denotes that a ship must regain her relative position on another ship or guide of her column.

'Previous order' flag conveys the order for guides to regain their previous relative bearing and distance to one another, and the ships in their columns to do likewise.

If ever a number of ships get mixed up (it might possibly happen through a misunderstanding), turn them all together to a compass course, and that done, 'reform'—and ships should not forget the rule of the road.

During all fleet evolutions keep a vigilant eye on the helm signals of your close neighbours. Mistakes have occurred before now on the executive being hauled down, and will do so again; but if eyes are skinned on the bridge of your ship, and a *contretemps* does take place, you are at once ready to meet the situation. If otherwise you blindly put the helm over to obey some order and a collision does occur; although you may protest in theory that you were perfectly justified, you will find in practice that your yardarm is very far from being furled. To 'hold on' and not give way to a consort in trouble is inexcusable and ungenerous, and is only practised by the ignorant.

Here may I venture to state that I think the three following points are generally recognized.

Firstly :—That the fewer the signals the quicker the evolution will be performed.

Secondly :—That every temporary leader of a sub-division or more—however short of practice he may be—should be given credit for *some* intelligence till it has been proved that he is gaggar.

Thirdly :—That when a ship is out of station, all hands concerned are doing their level best to regain the lost position.

Again, in fleet exercises when certain rules are laid down for their conduct concerning speed, &c., they should be honourably complied with; as so important are the results of these exercises nowadays to the individuals in charge—a 'peace reputation' may very easily be made or marred,—that to deliberately break the instructions for the sake of getting to windward of an adversary is very nearly as bad as cheating at cards.

Nevertheless listen to this little story shewing a magnificient disregard of manœuvre orders—orders forsooth adjudicated upon by mere umpires. It was only peace time—more was the pity; but the action was well worthy of the best British traditions of the ocean; and who, when they read the circumstances below, will be found to blame the gallant wrong-doer. It was no matter of subtle manipulation of the revolutions, &c., this time.—The deed was all so palpably open, and it took place during the manœuvres of 1889.

We in the "Howe" (flagship) and the "Rodney"—the two finest ships in the Navy at that time—were chasing the "Camperdown" and "Hero" at full speed against a heavy head sea.

Combined, we were the stronger and faster side, and the "Hero" was rapidly falling into our hands; but the "Camperdown," which could steam as well as ourselves, was according to rule and common-sense keeping her distance from us.—She rightly thought it better to lose one ship than both. Soon the "Hero" came by her fate, for after being well pounded on both quarters at short range she was made to strike her colours.

What then passed on the bridge of the "Camperdown" history does not relate; but the immediate sight of the discomfiture of his consort was far too much for the spirit of her fiery captain. Down went the "Camperdown's" helm; and with a—"To hell with the Orders," at full speed and firing all her guns she charged down to the rescue.

Useless was the umpire's signal "You are out of action," on she came; and with the spray flying from her bows dashed amongst us; and as she passed at point blank range hammered friend and foe with huge lumps of half combusted pebble powder, which in great continuous bouquets were spurting from her guns. One more effort did the umpire (a senior Admiral) make when he dared to put his head outside the refuge of the "Howe's" chart-house. Signal—"Stop your engines."—"Take station astern."—"You are captured" —he shouted. Back came the answer swift and clear, "Never"; and with this last breath of defiance fluttering at her masthead the "Camperdown" steamed away over the horizon and was no more seen.

On distributing letters to a fleet at sea, the flagship should gather her chickens close around her. Then let the distributing ship feed the windward vessels first, and that done, drop and help those to leeward.

When ships are gathering at a *rendezvous* after being dispersed, it is not strictly necessary, but nevertheless nice manners, if you arrive at the spot before your leader, to go out and join him as he approaches, and once more return to the *rendezvous* under his wing.

Mail bags should never be thrown into a boat but always passed by hand. The same applies when the boat is hoisted at the davits—the bags should not be chucked inboard.

A distributing ship should have half a dozen boat ropes *at least* over the lee side, and that is the only side, unless a dead calm, that the boats should be allowed to use.

With a line of ships in close order line abreast, and the senior officer wishes the hands to bathe, the wing ships must turn out at least four points to allow the other ships to open out and get into open order before the column is stopped.

When an anchoring organization signal is made prior to coming into harbour, first consider the present point to which your ship's head is directed, and when the executive signal goes up, get your bearing on your leader *before* you trouble much about accurate distance. Avoid edging in and out as much as possible, for in a big fleet if ships are all doing this before they get their bearings on, there is a great surge running through the line before you know where you are.—Always use your utmost speed.

If at any time you are ordered to bring in a detached squadron to form on the main fleet before it anchors ; come in on the compass by bearing, taking ground together as necessary by the well known simple signals, and when correct positions are finally reached, turn up on the main fleet's course, reducing to the normal speed of the fleet at the same time.—If this is well done it is indeed a pretty sight.

Should you be bringing a squadron into harbour and you fail to turn up exactly on your anchoring points, avoid

that infernal practice of "pinching," for it is not fair on other leaders, but acknowledge your error by taking ground together (a half point or so) one way or the other by signal.

When entering an anchorage in line abreast and you are in a rear division, if your guide gets into difficulties and out of station, anchor on the ship ahead.

On anchoring with a fleet, it is better not to make the signal "Stop engines," but simply haul the cones down when you stop, and then the light ships can keep their distances.

All ships should anchor instantaneously as the signal comes down, although the temptation to 'hang on' sometimes if a little astern is almost unsurmountable; but if you do, it's not fair on your next astern who has obeyed the signal instructions.

If anchoring on the slightest drain of a flood tide, remember to go astern in plenty of time or there will be a parted cable.

No ship should ever go astern after cones are down, although there is a dodge (if you are too far ahead) of checking your way by putting the helm hard over first one way and then the other, but it is not fair on the ships astern, and besides you are apt to lose direction unless very careful.

I think that cruisers, however big, when in line with battleships, very often lose their way much quicker than the latter after engines are finally stopped for anchoring; and I put it down partially to weight on the battleship's side, in

conjunction with the disadvantage to cruisers owing to the resistance of their larger propeller surface.—Again, I know that cruisers require an increase in revolutions to keep station when any decided turn is made in the fleet, because they take a larger angle of helm.

On coming into harbour to moor, after you have got the ship properly steadied on her line of bearing, devote your attention to the letting go of the first anchor and *do not snub the cable*; but have plenty of way on and let the cable lay itself out straight. Try and have the ship at rest just after the second anchor goes, and then go full speed astern, but throw your eye aft to see how close your neighbour is.

NOTE :—With heavy cables it is almost immaterial to enter into any calculation as to depth of water for letting go the second anchor. Again, on coming in alone in a single ship to moor in the fleet, if you find a ship swung over the spot where your second anchor should be, it is not laid down in the regulations that you should so carry out the strict letter of the law, as to run into her, and drop your last anchor on her quarterdeck.

I give here a rough idea as to when to stop engines in coming to an anchor from a speed of 10 and 12 knots in a vessel of the "Leviathan" class, and I should venture to add that in considering a battleship under the same circumstances there is not much difference for judgment.

From 10 knots if mooring :—Stop engines from a distance of three cables from the position of the first anchor, and go astern when half the cable is out.

From 12 knots if mooring :—Stop engines from a distance of four cables.

On coming to single anchor from 10 knots :—Stop when four cables from anchor berth, and then go full speed astern as anchor goes, but it depends how much cable has to run out.

On coming to single anchor from 15 knots :—Stop at six and a half cables, and then as above.

Ditto from 18 knots :—Stop at eight cables.

NOTE :—In all cases of anchoring, wind and tide whether favourable or otherwise, have to be carefully taken into account when estimating the way likely to be carried.

When wishing to clear a fairly open roadstead with many ships, all of which happen to be swung the wrong way ; after the anchors are away, get the ships' heads only half pointed to the required direction, then proceed under steam and turn the remaining points with way on—sea room of course admitting.

A portion of a fleet, or line of ships, weighing and leaving harbour, or again coming into an anchorage, should never be taken through another body of ships without permission.—It is not courteous, and in any case it is far from being a seamanlike performance—yet it has been done.

On leaving a harbour in a single ship with the intention of returning to the same berth in the near future, be most careful to check the bearings as you pick up the *individual* anchors.

I have previously remarked in "Simple Ideas" how perhaps it is best to screw a ship round on her heel in a fleet, at the same time keeping the bearing and distance on; but to shew how rules sometimes fail, and how difficult the performance is, I would ask indulgence to quote this experience that I had in the "Andromeda" ('Andy Dromedary') at Nauplia. The whole fleet had weighed, and, with the exception of ourselves, had turned to the requisite point. My ship had headway on, the helm was hard-a-port, the port propeller was churning away full speed ahead, the starboard screw was likewise doing its best astern, but yet her bow *kept coming up to port.* I perspired much at the time, but I guessed the reason after. There was a shallow sand bank on the port beam, and her port quarter would not come up to it—but talk of riding a horse with a dry mouth.

A forgotten whisper to a new generation:—It is the high and polished manners of the ocean for a detached ship on passing any British flag officer at sea, to ask his "permission to proceed."

Suggestions on a vessel changing bearing but keeping constant on a guide, with Table attached.

It was never my intention to introduce any Tables (for such generally stand for confusion) into this publication; but I cannot refrain from entering the one following, in connection with the alteration of course and speed of a ship in a fleet, when engaged in taking up a new bearing on a guide, her final distance remaining constant.

I think the Table will be considered simple enough; for any reference to it on a signal being made, will immediately *give an idea* as to what to do with the helm and engines —the Table is arranged for even points only.

The explanation is roughly this :—The right half above the diameter concerns alteration of course, and *normal* or *reduction* of speed; the left half below the diameter to alteration of course and *increase* of speed.—The figures in black refer to the points of the compass, those in red to the multiple of the normal (or guide's) speed—whatever it may be.

Thus suppose the guide's speed is 10 knots; you wish to change position from 'two points on the bow' to 'two points abaft the beam' :—

Place your finger on the column on the left marked 'two points on the bow,' run it along till you come to that above marked 'two points abaft the beam'—they cut in the right half of the Table.—Your ship must be kept out three points and the speed reduced 0·5 of 10 knots—which is 5 knots.

Present bearing FROM guide.	Bearing FROM guide, which has to be taken up.								
	Ahead	2 on bow	Bow	2 before Beam	Abeam	2 abaft Beam	Quarter	2 on Quarter	Astern
Ahead		2 out 1·0	4 out 1·0	6 out 1·0	8 out 1·0	3 out 0·6	3 out 0·5	3 out 0·3	Slow
2 on bow	2¾ in 1·3		3 out 0·8	3 out 0·7	3 out 0·6	3 out 0·5	3 out 0·3	Nil Slow	2 in 0·3
Bow	2 in 1·3	1½ in 1·3		3 out 0·6	3 out 0·5	3 out 0·3	Nil Slow	2 in 0·3	3 in 0·4
2 before Beam	1½ in 1·3	1¼ in 1·3	¾ in 1·3		3 out 0·3	Nil Slow	2 in 0·3	3 in 0·4	3 in 0·6
Abeam	1 in 1·3	¾ in 1·3	½ in 1·3	¼ in 1·3		2 in 0·3	3 in 0·4	3 in 0·6	3 in 0·7
2 abaft Beam	¾ in 1·3	½ in 1·3	¼ in 1·3	Nil Full	¼ out 1·3		3 in 0·5	3 in 0·7	3 in 0·8
Quarter	½ in 1·3	¼ in 1·3	Nil Full	¼ out 1·3	½ out 1·3	¾ out 1·3		3 in 0·8	3 in 0·9
2 on Quarter	¼ in 1·3	Nil Full	¼ out 1·3	½ out 1·3	¾ out 1·3	1 out 1·3	1½ out 1·3		2 in 1·0
Astern	Nil Full	¼ out 1·3	½ out 1·3	¾ out 1·3	1 out 1·3	1½ out 1·3	2 out 1·3	2½ out 1·3	

Judgment (especially when ships are close) must always be a great factor in this business, owing to the time and distance lost in working the helm. To take an extreme case.—Suppose a vessel stationed 4 cables ahead of a guide wishes to change her position to 4 cables on the beam; it is manifestly impossible for her to complete the whole 8 point turn as set down in the Table.

NOTE :—Dropping bearing from right ahead to any point up to the beam is generally carried out at equal speed.

There are two conditions under which the Table may have to be used—

Firstly :—*When the guide's course remains unchanged*, when.—To drop bearing—Decrease speed (generally).

„ —If before the beam, sheer out.

„ —If abaft the beam, sheer in.

To pick up bearing—Increase speed *always*.

„ —If abeam, or before the beam of guide, sheer in.

„ —If abaft the beam of guide, sheer out.

Secondly :—*When the guide also alters course and ships reform.* —On signal being hauled down, the guide is assumed to be at once on her new course, and a ship's relative position *from* her to at once change (by the amount of alteration of course); then use the Table thus :—

1. Present course—(say) North.

Present bearing of ship from guide, 2 points abaft port beam

Signal—Alter course to Starboard 2 points —Reform.

The new course is N.N.E.

The new bearing is now brought to port quarter of guide.

Required by Table to go from port quarter to regain old relative position, 2 points abaft port beam.

Haul out $\frac{3}{4}$ of a point, and increase 1·3 times guides's speed.

NOTE :—You must haul out $\frac{3}{4}$ of a point from *N.N.E. the new course.* In reality the ship will sheer in from her old course (North), and steer North by E. $\frac{1}{4}$ E. till in position for assuming guide's course, N.N.E.

2. As above, but alter course 2 points—Reform.

The new course N.N.W.

The new bearing is now brought abeam of guide.

Required by Table to go from beam to regain old relative position, 2 points abaft port beam :—

Sheer in 2 points from N.N.W., and reduce to 0·3 of guide's speed.—In this case the old course North will be maintained.

3. If instead of 'Reform,' a new bearing from guide is given, the Table is entered with new bearing.

Notes on Officer of the Watch at Sea.

Avoiding Collisions, etc.

I will not repeat the Regulations for the Rules of the Road at Sea, they are too well known and are always posted in the chart house of every well regulated ship; but I have a few words to say on the subject, and will commence my remarks with the caution.—*Never go in for close shaves.*

When meeting a vessel for which you will probably have to give way, do not begin by making *small alterations* of course (quarters of a point &c.) while a long way off, but stand on till within a reasonable distance, and then give her a *decided twist* one way or the other—two points or more. The meeting vessel then sees at once which side you intend to pass and works her helm accordingly, and knowing this, you can gradually, and by degrees when clear, bring your vessel back to her original course.

It is sometimes a good practice to take the time between the interval of sighting and passing a meeting vessel—it is useful in case of untoward accidents *especially at night.* While mentioning the subject of close shaves, I well remember a lamentable collision occurring in the Mediterranean some years ago entailing the total loss of one ship, and it was all brought about through running things too fine. Here is the story, and there is no harm in telling it for it may save others.

At one bell on a certain hot Sunday afternoon, a calm sea and a light breeze, a British corvette homeward bound was steaming for her next port—Gibraltar, at economical speed (in those days probably about four-and-an-onion). The officer of the afternoon watch took charge of the deck, and far away hull down off the starboard bow, a big sailing vessel slowly standing across the man-o'-war's track was pointed out to him. The officer of the watch had nothing to do, so by and by he began to alter the ship's course a shade to starboard, with the idea of eventually passing under the sailing ship's stern. This shaving to starboard went on the whole afternoon, till finally, just as eight bells was striking, he had with infinite care arrived right on top of the vessel with the fixed intention of shaving under her stern. Suddenly something went wrong either with his brain, eye, or judgment—he thought he could not do it. He gave the order "Hard-a-Starboard," and next moment had struck the unoffending trader bang amidships; and by one bell in the first dog watch the unfortunate vessel after being *four hours in sight* had settled down beneath the waves:—The officer of the watch had spent the whole afternoon in running her down.

The officer of the watch, especially in quick moving vessels like destroyers, should bear in mind that hundreds of collisions would never have occured if it had not been for the *reckless* use of port helm. Many men think that directly they have given the order "Port" (more than often the helm should never have been touched) that right is on their side, and that they have done all that is necessary; but believe me, it is far from the truth.

In a collision it is generally understood that the vessel that is struck into on the port hand is the one with justice on her side—that is also a fallacy.

When running more or less dead on to a vessel in daylight, the opening of her masts will give you the side on which she will pass. Compass bearings will always assist you in the knowledge whether you will clear a vessel or not, as should the bearing of the meeting vessel draw forward, so she will pass ahead of you, and *vice versa* if it draws aft, she will cross your wake astern—if the bearing remains stationary the two vessels will naturally collide.

When watching a sailing vessel which may perhaps cross your track, always take into consideration the force of the wind and what rate she is probably moving through the water, and if you have to clear her, and there is nothing in it, follow the sailor's instinct and steer to cross her wake. There is however an exception to this general rule, i.e.—The case of a fishing smack riding to her trawl, and she should always be passed if possible ahead; for if you stand close under her stern, the drift lines are not unlikely to be cut.—Thinking of trawlers recalls to my mind a little experience the good ship "Swiftsure" had with one of these small craft not so long ago :—

The grand fleet was manœuvring, and it was imperative that our ship should pass close under the stern of a humble trawler with her nets down. I was carefully watching as we rushed towards her, when suddenly an ancient mariner of many storms sprung upon her counter, and frantically waving his arms, semaphored—"Captain to Captain.—You are

coming too near."—Never till that moment—when the signal was reported to me—had I half realized the proud position I held as one of the noble brotherhood of England's Sea Captains.

At night the bearing of *any* light should be at once taken.

Vessels meeting in a river should always hug the shore on their own starboard side. In narrow passages or sharp turns where the danger of collision is imminent, the ship that has the *tide or current against her* should be the one to give way, and should even put her nose on the bank if necessary :—As a rule it will be found that most large rivers with a constant traffic, have their own navigation rules laid down by the River Board.

The left bank of a river is the bank on your left hand as you stand with your back to the river's source.

On entering a fog at sea *all* men are helpless, for although you may be able to answer for yourself, you cannot account for the vagaries of the *other* man in the other ship. I think the distance and bearing of a sailing vessel in a fog is a most difficult matter to determine, especially when she is beating to windward, with her horn at one moment bleating out "starboard tack," and the next "port."

And here I cannot resist relating an incident connected with a collision in a fog, which, while happily unattended by loss of life, nevertheless brought the cruellest of luck to an unfortunate Norwegian sailing vessel.

I was serving at the time in the five masted flagship "Minotaur," and the mishap befel the barque through running into us one first watch during the densest of black fogs off St. Catherine's Point.

The Norwegian had actually been out thirty seven days from Christiania, beating and thrashing down the North Sea and English Channel against a succession of adverse and south westerly winds ; but on the night in question the wind had shifted, and a fresh breeze had sprung up from the eastward—but with it came the fog. However, little cared our friend for thick weather, and he was gaily slipping along down Channel with yards square, and every stitch of canvas crowded on to make up for lost time. Suddenly she sighted the "Minotaur's" port quarter close across her bows, there was yet time and room to put her helm down and shave under our stern, but no effort seemed to be made to avoid a smash, she stood straight on, and next moment, to the consternation of all, she crashed into us just abreast the after jigger mast.

Luckily she had a cargo of timber and did not sink ; and the following morning we towed her into Spithead, and as soon as an interpreter could be procured (for none of the crew could speak a word of English), we were quickly enlightened as to the cause of the collision. The skipper who was on deck at the time, had never dreamt that any vessel afloat could be built with five masts. He saw the three masts of a full rigged ship clear off his port bow, and old 'blue nose' steered, as he thought, to pass under such a ship's stern, with the above lamentable result to his calculations.

In confined waters with high land about, a syren is a most useful instrument to keep you off the rocks. For if sounded within a moderate distance of lofty cliffs the echo will come straight back and hit you in the face, and it is then time to stop at once, sound again, and let go the anchor.

When running along the land and you have to alter course to clear another vessel, for *choice* always alter out from the coast.

On any chart, unmarked portions without soundings, &c., near the land, should always be considered as dangerous to navigation.

The officer of the watch should at all times at night refrain as much as possible from poring over the chart in the strong light of the chart-house—the reason is obvious.

The hundred fathom line is a continuous dotted line following the coast, which contains all soundings of one hundred fathoms and under. Soundings marked with a line and a dot on top, indicate the greatest depth reached without bottom.

A four point bearing.—Is to note the time when any fixed object, or light, which you are passing is on the bow, and again when on the beam (the same applies to beam and quarter), and by taking the difference between these times, and knowing the speed at which the ship is travelling, the correct distance at which the object is passed can be at once determined.—The base of the right angled triangle (distance run) being equal to the perpendicular—distance off.

The following are the hieroglyphics by which the different descriptions of lights are noted on the Admiralty charts.

F.	Fixed.
Fl.	Flashing.
Gp. Fl.	Group Flashing.
F. and Fl.	Fixed and Flashing.
F. and Gp. Fl.	Fixed and Group Flashing.
Rev.	Revolving.

Sec :— Occulting and Intermittent, when a light is totally and suddenly eclipsed.

Int :— When a light is visible less than 30 seconds eclipses—term Occulting applied. When visible longer than 30 seconds—term Intermittent.

Alt :—Alternating—Light shewing different colours successively, without any eclipse intervening.

The different forms of lights usually employed in lighthouses are :—

Catoptric.—By metallic reflections.
Dioptric.—By refracting lenses.
Cato Dioptric.—By both.

A vessel's steaming light should be visible five miles in clear weather, and have an arc from right ahead to two points abaft each beam.

A bow light should be visible for two miles, with an arc from right ahead to two points abaft each beam.

An anchor or stay light, is an all-round light visible one mile.

The steam light is trimmed by the forecastlemen—2nd captain responsible.

The starboard bow light is trimmed by the maintopmen—2nd captain responsible.

The port bow light is trimmed by the foretopmen—2nd captain responsible.

The speed lights are looked after by special men told off for the purpose.

When a fleet is in three columns and the directing ship leads the centre one, she carries speed lights on both sides—the same applies to any vessel in the fleet that has another in tow.

The quartermasters besides being responsible that the men on the bridge are properly dressed, are also answerable —under the chief quartermaster—that every spot on the bridge is clean, for no ship was ever smart with a dirty bridge.

Never allow the leadsman in the chains to *look aft* as he gathers in his line after a heave. It is a common fault, but the eyes of the leadsman should be looking ahead in the direction in which the ship is going ; also stop a man towing the lead—this is pure laziness.

In soundings of over ten fathoms, men should be instructed not to call the fractions on the line.

In freezing weather, a great help to the leadsman to prevent his hands from getting numbed, is for him to dip them in oil before entering the chains; and a toggle in the line is also a good thing to prevent slipping when heaving. On going into the chains at night, be careful to take the drift from your hand to the water or you will cry false soundings; and in connection with this, we all know the story of the line-of-battle-ship that was flung back because they thought that next moment they would be ashore, the leadsman having called soundings "the deep four"—but he lied, for he had only hove his lead into a lower deck port.

I don't think the hand lead now in our fast steaming ships is of the slightest use, but for feeling your way slowly into a doubtful anchorage, with good quartermasters in the chains, there is nothing yet invented to surpass it.—Nevertheless the following little anecdote will show into what a ridiculous farce even this heaving of the lead can be turned.

I was the officer of the first watch in a "gobby ship" groping our way to get some kind of an anchorage off the mouth of the Thames on a thick foggy night. Both leadsmen were in the chains singing the soundings with great confidence and unanimity, we knew it was a level bottom and all was well. Suddenly to my astonishment the man in the starboard chains shortened up three fathoms, and his alarming cry was immediately and identically reiterated, by his mate in the port chains. I stopped the engines and rushed over to verify the heave. It was absolutely false, and on my indignant questioning of the ancient gobby holding the lead, I got the reply.—"I begs your pardon sir, but it's a long spell since

I was in the chains, and the marks are a bit misty like to rekollect."—It was enough! I crossed over to ask port chains (he was more grizzly still) what he had to say, and was met without any deception, by—"I' ad forgotton the line sir, so I was a-copying the man in the starboard chains."—On signing the log in this memorable watch I found the quartermaster had made the glass rise *two inches*.

Rough bridge corrections to be applied to Sir W. Thomson's Sounding Machine.

Barometer standing at			$29\frac{3}{4}$	add	1	fathom	to every	40	fathoms	
„	„	„	30	„	„	„	„	30	„	
„	„	„	$30\frac{1}{2}$	„	„	„	„	20	„	
„	„	„	31	„	„	„	„	15	„	

Always make the boatswain's mate pipe the order in *exactly the same words you give him*, for many of them with reasons best known to themselves, find this the greatest difficulty; they will invent all sorts of additions to simple pipes, and not only do they make fools of themselves but they make *you* appear one too.

Men when hauling on a rope should pull with straight arms, with the back of the leading hand underneath to keep the rope up.

In bad weather when the men are waiting on the falls to hoist a returning sea-boat, it should be impressed on them into what danger they put the boat's crew if they do not *fly away* with the falls the second the order 'hoist' is given.

At sea, should it be necessary to communicate between two ships by boat at night, the vessel sending the boat hoists

a white light at her royal masthead at the moment she shoves off; the ship to which the boat is sent hoists a similar light at the same time, and only hauls it down when the boat has reached her. As the boat shoves off again on her return journey she rehoists it; and as soon as the boat has reached her own vessel (and is hoisted), both ships haul down their lights.

When entering a harbour, at the order "Steady," the quartermaster will generally find it better and more simple to steer by some fixed object on shore than by his compass—but it should be realized that a sailing boat standing across the mouth of the harbour is not a stationary mark.

"Starboard two points," signifies to say that the helm is put to starboard and her head goes off two points to port.

The order "Steady Port" conveys that the vessel is almost on her course but wants if anything a slight touch of port helm, and *vice versa*.

The revolution flag is always hoisted on the side towards the directing column, the cone on the opposite side.

When trimming speed lights always haul down the upper one first.

A ship that is towing *always* hoist both cones.

When it is necessary to suddenly go astern in your vessel in the fleet (a hustle in leaving or entering harbour, &c.), shew your inverted cones both well up *before you touch the telegraphs*—it helps your neighbour behind.

If you happen to be in a ship fitted with telemotor steering gear, and through the leathers being perhaps a little dry or defective, the helm, after being over for some time, begins to creep, there is only one thing to do and it is very unpleasant.—Jamb the wheel *hard over the other way* and then immediately back, and it will generally be found that the valves again act properly.

No uncovered lighted lantern should ever be allowed about the upper deck at sea to obscure the vision of the officer of the watch and look-out men.

When an order is given for all lights to be obscured, it is a good system to partition the ship off between the several warrant officers and make them respectively report their portion of the ship correct.

Chains, look-outs, and mast-head are all one hour 'tricks', the helm only being a two hours vigil On going to sea, the reliefs generally commence at the forecastle and are passed on throughout the parts of ship. In a big ship when one hand is piped to fall in, a leading hand should always be with them.

After ashes have been got up, the party at work about them should clear up, and (if necessary) scrub the deck around the shoot before they go away.

At night, those responsible for providing night signals should be constantly exercised in their duties.

Though it is not the custom, the night signal boxes should always be kept in the sea boat in the day time as well

as at night.—Take an instance of lowering a lifeboat just before evening quarters (the time the box is usually put in), the lifeboat is temporarily lost in the gathering gloom of a winter's night, and how is she to attract attention if she has no fireworks ?

When keeping station in the fleet, the officer of the watch should endeavour for the sake of those astern, to alter the revolutions of the engines as little as possible. I think the great error committed by beginners in the art of station keeping is, that they *will not* give the ship time to 'settle.'—It no doubt arises from over anxiety, but the result is that the revolution indicators are never at rest, while silent oaths are being bravely bottled in the engine room.

With practice and careful observation, it is quite possible to keep good station in the line without the use of the sextant at all. Stand with your toes against a certain seam on the bridge, and when the ship is in station by the sextant, observe with your eye where the top of the jackstaff (it used to be the flying boom end) cuts some part of the ship ahead ; then if your mark travels up on the other vessel you are closing, and if down, the opposite.—When working from the conning tower this is the only method of keeping station ; and in this case, I generally take the edge of the mushroom cover for a cut on the ship ahead, and a certain square on the floor grating to cover with my toes.

Officer of the watch when new to the bridge and strange to your work, do not be too proud to ask advice ; but on the other hand refrain from expecting the Captain's

presence behind your back night and day. Be not rash, and do not act without thinking. Seize *from the first* every opportunity of assuming responsibility ; and you will quickly discover that sleeping faculties have been aroused in the back of your undoubted wooden head that you little guessed were there.

Some Extracts from an Order Book.

When in company with the fleet, no officer of the watch is to take charge of the deck till the ship is in station.

The officers of the watches should clearly understand that the Captain is accessible *at all times*, night or day, and in *all cases of doubt* or emergency he should be communicated with. If urgently required, the simple words "Come on deck" should be sufficient—circumstances can be seen and told afterwards on the bridge.

Note :—Myself, I have always caused to be fitted in my sleeping cabin a loud sounding 'emergency bell,' which is only used by the officer of the watch when there is no time for verbal message or any other means of communication—its first tremble sends me flying on to the bridge.

I might remark that once, and only once, has this bell been rung; and then to my rage and astonishment I found no clothes laid out. In frantic haste I danced and damned about my cabin vainly searching for garments, while expecting the shock of collision or something worse at every moment; till unable to stand the strain any longer, I dashed from my cabin clad as I was; being straight-way defeated. For the cabin door orderly boldly stood across my way, and blurted out "Sir!—The ship is in harbour!" Some fat-headed signalman of the morning watch had inadvertently touched the bell while cleaning round the push, thereby needlessly disturbing a, perhaps, equally drowsy Post Captain.

When a general signal is being made at night, it is best to inform the Captain that there is one going on—even if the purport has not been finally gathered.

The order :—"Call the Captain as usual"—has the general meaning that he is to be informed at any threatened or material change in the weather, if a fog comes on, anything wrong with the machinery, any great fluctuation of the glass, a ship in the fleet in trouble, all general signals and those affecting the ship, reporting of daylight (according to the custom of the Service), the passing of wreckage ; and once and for all he should be approached *in every case of doubt and indecision.*

An officer of the watch after taking charge of the deck, should consider it his primary duty to decide in his mind what he would instantly do if a man fell overboard.

NOTE :—It is not unusual for the cry "man overboard," to affect with panic and indecision men possessed of even the strongest nerve under other circumstances ; and many many precious seconds have I seen wasted while the brain of the man who should *act* stood still—hence the above warning.

If a man falls overboard—especially at night—it is better (unless there is a heavy following sea running, and it is necessary to give the ship a cant and make a lee for the lifeboat), to keep the vessel, if by herself, on her course whilst going astern—for it is the first natural inclination of those in a lowered boat at sea to pull straight astern. If you are in company and have a neighbour astern, haul out two

points from the line and then turn her head up to the original course, using full helm for both turns and going astern till way is stopped.

A signalman, day or night, should fly aloft to help to keep sight of the man, or pick him up when the search lights are switched on.—The best search lights to use are the lower ones, and the beams should never be turned directly on the life-boat till it's a certainty that they have hold of the man.

In the daytime, flags must be immediately bent on by the signalman on deck to direct the boat if necessary, and the church pendant shown low at the peak, or over the taffrail.

At night, switch on position lights.

Do not—as is often attempted—heave the *Kisbie* at a half stupified man in the water, for if you hit him you will most assuredly complete his discomfiture and send him to the bottom—so throw it near him.

If a man falls overboard from the ship directly ahead, it is not possible to steam directly over him on account of your bow wave which will throw him out.—Watch the next biscuit-box you see across the bows of the ship astern.

NOTE :—In two long ships that I commanded with the life-buoys slung right aft, a most ingenious device was fitted by Lieutenant C. Ryan for instantly letting them go from the forebridge ; and later on, by a small additional contrivance the rocket was fired at the same instant. The circuits from life-buoys to bridge were fitted with detectors, and the

officer of the watch to make his mind easy and happy, always tried them when he took charge of the deck.

Life-boats' crews should always be carefully warned off and *seen* on their respective thwarts (sometimes neglected), and at night should lie down together in close proximity to the boatswain's mate.

NOTE :—No boatswain's mate, signalman or quarter-master, should ever be allowed to wear a sou-wester at night with the ear-flaps down.

Unless *at once* ordered to the contrary, the life-boat will always be lowered, and when she is away the second sea-boat's crew should man the other life-boat in case it is found necessary (for extra search or accident), to lower her also.

On lowering, give the order 'out pins' when half-way down, then lower again, and endeavour to slip—if possible—on the crest of a sea, and the boat then flies clear.

Here is a wrinkle.—After lowering a life-boat make her pull straight out for a dozen strokes or more from the ship's side, and so avoid stemming the swirling waters from the reversed propeller. Again, should she be bringing an unconscious and nearly drowned man back to the ship, however short a period he may be in the boat, the midshipman should not leave him huddled up in a heap in the stern sheets with probably his chin on his chest ; but, if weather permits, keep the two stroke oars tossed in, and lay the man on his breast across the after-thwart, holding his head slightly down and

pulling his tongue right forward over his lower lip to let the lungs drain—the very fact of saving a few seconds in the boat to help recovery, may be the means of preserving the man's life.

There are all sorts of fads and methods for securing boat-ropes, but it is generally found best to hitch the end of the boat-rope to the strop of the lower block of the foremost fall, as the rope *is not wanted when lowering* but only in hooking on; and when sending the boat away, the idea is to get her clear of the ship's side as quickly as possible. It is otherwise often a painful sight to see the bowman of a sea-boat vainly struggling to slip the boat-rope, while half a dozen choleric officers heave outward and inward curses at him from the gangway and fore bridge.

It is not stretching a point to state that when away in a life-boat on a moonlight night, the moon will often shew the life-buoy up.—You get the buoy's rough position between the boat and the rays of 'the sailor's friend,' and then pull round.

When the life-boat is away and the weather is bad, the crew should not exhaust themselves by straining to get back to the ship,—but the boat should be laid nicely to with the oars, and wait for the ship to give her a lee; and those that remember the story of the "Arethusa" frigate and her boats will agree with me in giving this caution.

When life-buoys are dropped for exercise, the engines should not be reversed before the buoys have gone; neither should the latter be made fast to the ship—however invisible the lines.

The life-jackets supplied by the service have the supposed power of supporting 24 lbs. of iron in salt water.

The officer of the watch should have full power to put leadsmen in the chains whenever he thinks necessary, but he should not let them lay their leads in without reference to the Captain.

On suddenly entering a fog—fog signals should be immediately used without reference to the Captain.

On any alteration of course, immediately the ship is steadied on her new course it should be reported to the Captain, at the same time mentioning to him what the fresh course is.

It should constantly be carefully borne in mind, that a vessel steering a course with a heavy swell and wind on the beam, will often have her head deflected a degree or two to leeward of her course ; the quartermaster will always bring her back to her correct course but never a shade to windward, as at times he should do—the error of position grows, and in making your land-fall it may prove a matter of regret.

The time of losing sight of a light or land should always be logged.

The ship should be logged in or out of station at the conclusion of each watch.

NOTE:—A tip sometimes useful. On a starry night (war time or peace) and you are expecting some sudden distant signal, rocket, or flash of a gun to appear anywhere

round the compass; when it comes, run your eye to some star above it, and the latter's bearing will give you a capital rough idea of direction—without stars a cloud will often help.

For the information of those who *don't know.*

The bow-bearing of an object.—Is anything seen from dead ahead to four points right or left.

The quarter-bearing.—Is the same i.e.—Four points on either side from right astern.

Anything bearing on either side between four points from right ahead, and four points from right astern—bears so many points—before, or abaft the beam.

When cruising without lights, if ever there is any doubt as to the close proximity of a vessel endangering collision, switch on navigation lights *at once* and stop engines—never mind what the 'manœuvre orders' for the night may be. I say this, because the officer of the watch should never let it slip his memory, that should an accident occur through not carrying out the regulations laid down for safe navigation, the inevitable court martial will be but too surely held on his Captain and himself. And in this time of a ship's misfortune, when 'stars are setting,' the sympathy extended to those concerned, by the British public—certain members of Parliament &c. (who are generally *quite* ignorant on such subjects), has been proved to be as scanty as the daily pay we sailors draw for running such risks—without complaint—for the good of the Service.

The officer of the watch should always have the Captain informed when lights and look-outs are placed ; and with the fleet, great care should be taken that the circuit of all signal and speed lights are efficient. The failure of any circuit during the night, should be logged for the Captain's information in the morning.

The speed entered in the first column of the log book is not necessarily the difference of the patent log for any two hours, or even the mean speed by patent log during the watch ; on the contrary, it is the speed which the officer of the watch *considers* the ship to have made *through the water* during his watch, and should remain constant for each hour unless conditions of weather alter.

The opinion can be formed after considering :—

(a) The speed that the revolution should give.

(b) Loss due to known fouling.

(c) Wind and sea retarding the ship.

The speed given by patent log should *assist* him in forming an estimate, but should not be the predominant factor.

Captains have different ideas as to the regulations of the clock at sea. I think the fairest is to divide the time between the first and middle watches when the clock has to go on ; and when it has to be put back, to do it all in the morning watch for the sake of the decks.

Revolutions per hour for each propeller should always be entered in the log, and great care should be taken that the

revolution indicator is not touched till the lower speed light is adjusted. The handle of the engine-room telegraph should always be placed in the proper position at the different speeds.

A board should be placed in every chart-house with the 'telegraph' and 'helm angle' orders on it, and they should be rigidly adhered to.

Full speed :—Every ounce of steam that the engines will take, or the boilers give.
Half speed :—Ten knots.
Slow „ :—Five knots.

Under ordinary cruising conditions—except when working up for undergoing full power trial, or when entering or leaving harbour when the engines are under the sole charge of the Captain—the engine-room telegraphs should invariably be kept at 'half speed,' and the revolution indicators alone used for regulating the ship's passage through the water.

Shaft tell-tales should always be connected when going in or out of harbour, and not disconnected when leaving an anchorage till orders are received to that effect from the bridge.

When transferring the cone and flag from one side to the other, care must be taken to lower the cone slowly down, not to drop it as if the ship had stopped engines.

Remember that sudden columns of smoke from the funnels arise from bad and irregular stoking.

If possible, an officer should always speak down the telephone or voice pipe from the bridge to the engine-room.

NOTE :—It is as well to remember that the latter means of communication was never built into a ship to afford a medium of assault by one officer on another.—For I well recollect a certain original midshipman on watch on the bridge, who wanted to square yards with an engineer shipmate on duty below, and this is what he did. He, the midshipman, rang up the engineer below, and having got the latter's ear well glued to the bottom of the pipe, down went the contents of a basin of extremely hot middle-watch cocoa.

The engine-room should always be informed of the approximate time of anchoring, and if possible an hour beforehand ; also if it should come to the knowledge of the officer of the watch that the ship might be stopped for some time, he should inform the engine-room. After anchoring, the steam on the syrens should be turned off.

Men running about the bridge and upper deck should always be properly dressed, no trousers turned up after the decks are scrubbed, and no caps on the back of their heads ; and any man coming on the bridge improperly dressed or failing to salute, should be corrected.

The boatswain's mates and corporals of the watches should be held responsible that no irregularities are carried out on the upper deck or *under the bridge* during working hours ; also that men are not lounging about during the time of entering or leaving harbour ;—

The boats should be clear of men, no one over the ship's side, no ugly faces filling up the scuttles or guns ports, and *no Captain's steward lolling over the stern walk.* A clean ensign should fly clear at the peak, and the ship should sweep into harbour 'proud as a ruffling swan,' and not as if she was ashamed of herself.

Men going or coming down from aloft, should be *made* to run the rigging—practice in the 'early hours' for stiff joints or halting nerves has a wonderful effect.

Vessels escorting a royal yacht usually fly the jack at the staff in the daytime and haul it down at night.

When a man-of-war or any vessel that even *resembles* a government ship is sighted, the Captain must be informed; should she be a flagship, and your vessel is likely to pass her within a reasonable distance, the saluting party should be warned to stand by. If you salute at sea, it is a graceful compliment—beside being picturesque—to turn and stand down towards the vessel to which you are paying respect, resuming the original course when the salute is completed. No order to fire the first gun should be given, till the officer in charge of the salute sees the flag broken and flying *clear* from the royal masthead.

It is good practice for both sides if, when meeting or overhauling a merchant steamer in the day-time, some simple signal is interchanged, but care should be taken not to tell him that he has "a rat in his fore chains."

All communications that an officer on full pay may wish to forward to the Admiralty or Commander-in-Chief, should first pass through his Commanding Officer's hands.

A senior should never be sent with a message to a junior.

The Captain's uniform should be saluted by every individual when he first meets him in the morning, but to *say* 'good morning' is not *always* advisable. It is in fact sometimes quite dangerous; and therefore before venturing on such, it is as well to exactly guage the state of the skipper's liver. To be met with a—"Wh-a-a-a-t!" to your bright and breezy salutation, gained from lungs full of the air of a morning watch, is *not* an encouraging sign, and the wise man will gently simmer himself away.

No semaphore signals should be made at sea except through the Captain, and no signal from a senior officer pointing out a fault should be replied to unless an answer is desired.

When all the world feels yellow.

Towing.

A ship being taken in tow :—As is well known, the ship about to be taken in tow (unless perhaps when she is ashore) supplies boats, grass lines, hemps and wires. The wires should be paid out through the hawse pipes and secured to the cables (which should be bitted); and the cables, before being finally secured, should be veered out a full half shackle, and more so in heavy weather :—For a long ocean tow, two shackles of chain will not be too much.

NOTE :—On a vessel being taken in tow in a fleet for exercise, it is a moot point whether she should be allowed to move her engines to stop her way after the signal is down. I say no! Although others will maintain that in action the ship being taken in tow will probably be disabled, and therefore it is permissible to stop her way by reversing engines.

Precaution.—Range the cables before the bitts, for the weight of the wires will not be sufficient to render them round. Do not tow with the cable holders but with the compressors. Stop each fake of the heavy wires (before commencing to pay out) with a separate three inch hanger, and let one fake go out at a time—the fakes should be stopped to some strong bridge stanchion or ring bolt.

It is a good idea for the ship being taken in tow, to have the two officers who are in charge of the hawsers

stationed on the knightheads, armed, one with a green, and the other with a red flag ; and then by working their flags, those in the towing ship will know what is going on with the hawsers.

The evolution for drill is never complete till both vessels have gathered way and are on their course.

On taking a ship (of about your own tonnage) in tow, it is often best to come up from astern on the weather side, and then during the time your vessel is taking in and securing the hawsers, she will not sag far across the other ship's bows ; this method also gives a lee for the boats to get their grass lines on board.

NOTE :—It should be remembered that a grass line wants treating with care, for unlike a hemp which renders more easily when wet, the grass jambs, stretches, and cuts.

With towing wires, the delay will generally be caused in getting the slips and towing swivels shackled.

Wire stoppers are required to take the weight of the hawsers whilst unshackling or casting off.

A spare shackle will often be required for taking the large tongue of the slip, as the eye of the incoming wire may be too small—in this case a joining shackle is more useful than an anchor ditto.

Plenty of mats are always most necessary.

With towing chains—a most heavy and cumbrous fitting—the chains must be bitted ; there is a slip at the

end of each chain for the eye of the wire, and when casting off tow, the slip is knocked off and the wire eased away with a hemp.

NOTE:—A towing ship in a fleet always carries both cones in the daytime, and the ordinary two lights at night; and if the tow is over six hundred feet, she carries three lights.

When casting off a tow, avoid a ludicrous mistake made in China twenty years ago. *Both* ships let go the end of the towing hawser (a typhoon was coming on and there was panic), and on arrival of the fleet in harbour later, there was a curious interchange of signals as to where the hawser was.—It lies at the bottom of the Formosa channel!

On hauling in the wires when casting off, it will greatly help the ship doing it, if the towing vessel will back astern gradually as the wires come in; doing this obviates the great long heavy bights. Again, the ship hauling in must also look out herself that she does not overrun the hawsers, or considerable loss of time will take place, principally caused by the friction of the wire under the bottom.—There will also be *another* description of 'friction' rampant on the bridge. Previous to the tow being cast off, the two grass lines that have been hauled on board the towing vessel, should be coiled up and stopped to her ends of the wires, this saves time in the evolution.

NOTE:—Before hauling in the wires on casting off, it is as well to get a good running start by tailing the big wires with smaller ones shackled on to their inboard ends.

If a heavy ship takes the ground badly, it is always a matter of considerable thought and arrangement, before you can attempt with any satisfaction to take the first pull; but in an ordinary case when little difficulty is anticipated, the helping ship should anchor as close in as she can with safety, and veer astern; then send boats with hauling lines for the stranded vessel's hawsers and haul onboard. Remember your own ship's draught, and furl your own yardarm.

NOTE :—If weather is too bad for boats, grass lines and barricoes will have to be veered astern for the hemps in the first instance, to be followed later by the wires. When all is ready, heave round the capstan (to tauten the wires), and then go ahead.

If the vessel comes off with a run, you must look out she does not bump you as happened to us in the "Linnet" in '85, when towing a Chinese training ship off the beach at Chefoo.

Apropos of the above—Some years after, when I was in the sloop "Dolphin," we ran down the Red Sea from Suez to try and do a similar good act for the Brazilian corvette "*Admirante Barossa*," which (in charge of an *Arab* pilot) had sailed on shore at Ras Dib. But we found it blowing far too hard with a very heavy sea running. However, in time, we anchored to windward and veered our boats astern and rescued the whole lot; over four hundred officers and men. They were in a bad way having been two days on the beach without any water. We had the grog tub on the gangway full up with Adam's wine, and as each man came over the side he was given a mess basin and drank his fill—most

refreshing to watch in that hot climate; and not a few of them spluttered out "God save the Queen" when they had finished. We had them all on board for the inside of a week. They lived on the upper deck, and for beds they slept on the spare courses and topsails opened out, with a reef taken up on the head ropes for pillows: spare hammocks were used to keep the dew off, and they were very grateful.

I always used to think that the little "Dolphin" was a wonderful craft for stowage where the human element was concerned, for we once took a whole Soudanese battalion, nine hundred strong, from Suakim to Trinkikat. We certainly had to fill *all* the boats at the davits, and the upper deck was chalked off like a chequer board where they had to stand in their twenties. It was luckily a passage lasting only a few hours, for there was positively not room for all to sit down, and had we got a roll on goodness knows what would have happened; as it was, there was difficulty in getting space to let go the anchor. We were only 186 feet long, *but we did it*,—much to the confusion, a few days later, of the redoubtable Osman Digna.—And now I must get back to the sea.

On a large ship taking a smaller vessel or derelict in tow, it will be found best to take your ship up to leeward of the lighter craft, for then the boats carrying the hawsers can get a lee from her. Again, if you attempt to go to windward, you would soon find that the bigger vessel will quickly drift on top of the lighter one. Another advantage of going to leeward is gained through the well known fact, that large men-of-war (as now constructed) will invariably come up stern to the

wind when under stern way ; and so by moving the engines, a ship wishing to close a derelict, can without danger almost touch her with her stern walk if good judgment and care are exercised, thereby much assisting the boats struggling to get the wire towing hawsers on board. The bights of these hawsers *must* be supported between the two vessels by other boats, if no hauling lines are possible.

NOTE :—If the vessel being taken in tow is very light, and the hawser is heavy, it will be found that the actual weight of the bight of the wire may bring the two ships together, and you must therefore be prepared to move the engines slowly ahead if it's likely to occur.

When towing a craft with helm disabled, all efforts should be made to prevent heavy surging. Secure the hawser as far forward as possible (if a sailing vessel to the foremast), and frap it in directly over the stem if feasible. A gammoning to the bowsprit, or capstan (should there be one) will help.

When taking off a stopper on a wire hawser prior to hauling it in, mind the hawser is well manned before-all, and that the *strain is off the stopper.* With a short end, and there is doubt as to being able to hold and haul in the wire, tail a stout hemp on to the inboard end of the wire before touching anything.

Weight and drift in the towing hawser is *everything*, and the ideal tow is when the bight of the hawser just rests on the water as the ship being towed lifts to the seas.

Towing a helpless craft to an anchorage (she being without an anchor) is most difficult, especially at night. I refer to the judgment required for checking her way so as to bring her to a standstill at the right place. For as surely as you stop engines (however slowly you may think you are going through the water), so will she keep surging up on top of you. Easing down in plenty of time combined with patience is what is required, and the bight of the wire reaching and dragging along the bottom will help to do the rest.

The best method of towing two destroyers is to take one on each quarter. Let them steam up one at a time under the quarter, then heave a light line on board the destroyer with a *sand-bag* at the end (if properly flung, a line with one of my patent sand-bags bent on can be hove full thirty fathoms), and this done, let them haul the eye of the wire onboard with it. Shackle on their own cable to the eye of the wire with a slip, and veer out at least two shackles —the ship towing at the same time paying out the *whole* of her wire as the destroyer drops astern.

NOTE :—The towing ship will probably have to lend the destroyers a shackle apiece for securing the wire to their slip.

Towing two destroyers in tandem is as useless as it is dangerous; for if the sea rises, the towing strop round the leading boat will most surely stretch, the seizings will give way, and the strop will then fall under her bottom and foul and damage the propellers —if nothing worse.

Should this ever happen, the only way is to drop the damaged strop clear of the boat altogether by cutting (with a hatchet) the wire lashing round the stern.

A destroyer being towed should just have enough steam to move her engines round, disconnecting or locking is altogether a mistake.

If a destroyer, or smaller vessel, when being towed is also steaming, she must be very careful that she is not steaming so hard as to over-ride the towing hawser—for it is rash and dangerous.

NOTE :—When two destroyers are being towed on the quarters, one should be towed with rather a longer drift than the other, and neither destroyer should use any but very small helm—three degrees or so.

On occasions when towing a destroyer, it may be necessary for the towing ship to stop *immediately* for her, before there is time to flash or make a signal; therefore some instant sign must be arranged—a rocket by night, or syren by day.

A petty officer should always be stationed on the quarter-deck of the towing ship to watch each hawser—towing mats are most necessary.

On casting off a destroyer, stop engines and shorten in on both ends, i.e.—You with the wire, the destroyer with her cable, and the destroyer steaming slowly up to help the bight. As soon as the destroyer gets her cable in, she must *immediately* free herself by knocking off the slip, and let the towing ship do the rest with the wire :—

Casting off a destroyer should always be done with the greatest despatch, for it might be an evolution of immense importance.

Communication with a destroyer when despatches have to be sent, is quite feasible even in the worst weather; let the destroyer come up under the lee-quarter well clear, and once more heave *that* sand-bag line. When it is caught, bend on to it an ordinary primer tin which is soldered up with the despatches inside.—The destroyer *should* return the heaving line when later she meets your ship in harbour.

A reminder that I had almost omitted, and it is very important.—In all cases of taking in tow, the vessel paying out the hawsers must be most careful that the ends of the 'hauling hemps' are not secured directly to the eyes of the wires; but instead, bent on to the wires with a rolling hitch two fathoms down, after which the eye of each wire should be stopped to its respective hemp with a stout strand.

There are also two other matters :—

Firstly.—If a clear lead will allow on the upper deck, a wire towing hawser can be eased out on the bight in a long ship by means of a shackle and a tail-rope from right aft.

Secondly.—In the case of a wire hawser (faked) being paid out on the forecastle; it's not a bad idea to have a jackstay led over the deck across the fakes, to prevent them flying up and kinking as they run out through the fair-leads. I recollect once seeing a man caught by such a flying bight, and flicked overboard as if he had been tossed by a bull.—Luckily, although decidedly upset in nerves and equilibrium, he was none the worse when picked up.

Targets

NEARLY all target work is dependent on the weather, and I don't know which is worst—wind, tide, or sea. There is also the nuisance of having in many cases to mess about with boats ; and at times, *all* descriptions of targets appear to be either bewitched or drunk and incapable of standing the right way up.

To moor an ordinary mark target in blowy weather from a ship underweigh where no tide is experienced :— Have the mooring rope with sinker suspended *right aft.* Drop the target first, and when the target is astern, let go the sinker ; otherwise, if sinker is forward and goes before the target, you will foul the propeller or else wrench the target.

If you intend to weigh the target also from the ship ; before you let it go, bend on six fathoms of stout line (as a bridle) to the mooring rope beneath the target, and secure the other end to one of the masts of the same.

To pick up :—Grapple the bridle and haul the bight up on the forecastle. Unbend the end of bridle from the target (a man in a bowline) and use it for hauling up the mooring rope ; and once hold of this rope, you can weigh the sinker (or anchor) from the ship, but care must be taken to get it up and down, or you will carry it away :—

As soon as sinker is lifted, the target can be guided anywhere from the ship to the most convenient spot to hoist it in without unbending the mooring rope.

To moor a hundred foot battle-practice target from a small ship and boat, there being no proper permanent moorings laid down :—Tow target out to position, having mooring ropes (with sinkers attached) hanging to cat davits.

On arriving at the spot, head the ship in the direction in which the target has to lie, then let go your windward sinker and the target will swing head to wind or tide. Then drop to leeward in the ship, and make your boat give you a line from the target, and tow the rear end of the target round till it points just beyond the compass direction in which the target has to be. This done, drop the second sinker ; after which, moor the other two corners. It is easy to write all this, and I don't think it is difficult provided there is no tide, but it is hard to get a target *quite* satisfactory without the element of luck to guide the elements of nature to your help.

On removing a target, weigh the leeward sinkers first ; and all sinkers should be well buoyed with double buoy ropes before they are let go.

If your ship is told off at any time to lay down buoys and their moorings for a battle-practice target, I don't think a better plan could be suggested than that followed by Captain Sir R. Arbuthnot, in "Hampshire."—The buoys were slung amidships of "Hampshire" outside the ship, and ready for slipping. Two anchors were slung forward on each side, with mooring cables attached to buoys ; while aft, two other anchors and chains were suspended in the same manner.

The ship steamed out to the required position for target, and her centre was placed above the spot where the first buoy was to be, at the same time her head was in the proper line of direction for the anchors. When all was ready, the first buoy was dropped, and immediately followed by its two anchors (together) on that side; this done, the position of the ship was then altered, and the same procedure carried out with the second lot of moorings.

Improvised battle-practice targets which are built with masts instead of lattice work, should be fitted with a short stout bowsprit at each end for staying the masts and tautening the head-rope of the sails; and if the target is put together on the beach, after it is launched the bowsprits should also be finished off with a couple of dolphin strikers to allow of final setting up of stays.

With the service battle-practice target as now constructed, men of the target party should be well exercised (before the target is taken out to its moorings) in making, furling, and shifting sails; and during the practice, provided the outside frame of the lattice work is not damaged and the weather fine, the sails should be shifted and the target clear of men for another run in well under an hour.

Sails should be on the target when being towed out, but not triced up and brought to, for—except in a dead calm—this weight aloft brings too much work on the upper framing. The sails are always spread on the side from which the engaging ship is firing, and the great art in setting is to have the head stretched taut along the upper framework, and the leeches hauled out close to the sides.

NOTE :—The framing of the lattice work is the correct size for sail, i.e. 92 ft. × 30 ft. The sail often shrinks from wet, and if it is found that it is not possible to make it cover the whole framework, strips of red canvas or felt should be attached at the sides to make the target a fair one.

When towing a target out to sea, it will be found that a speed of eight knots through the water will be about the margin of safety to prevent damage.

When securing the target between the mooring buoys, there is little difficulty if wind, tide, and sea are absent, but otherwise a good deal of back work is required.

Of course circumstances alter procedure.—But I think the simplest way of mooring, is to tow the target up (by the ship) to the weather buoy in such a manner that when the ship is anchored to windward, and target veered astern, it (the target) lies close to this buoy. Have three boats, i.e.—Two steamboats, if available, and the sailing pinnace ; also a target party (previously drilled) of not less that sixty men.

One steamboat will take one wire pendant of the target and secure it to the windward buoy—if target is close enough when lying astern of ship. If not, she will take a warp from the buoy to the target, and then secure the pendant when target is hauled within distance.

The pinnace (in which are the target party) will be towed by the other steamboat to the target, where men will be disembarked ; they will also take with them a large snatch-block, some strands and strops, and a couple of stout jiggers.—

In the pinnace also should be coiled away a couple of hemp hawsers and another snatch block and strop. After target party are clear of pinnace, she must make fast one end of a hawser to the leeward end of the target, and then pay it out as she is towed by the steamboat to the lee buoy. To the lee buoy she temporarily hitches her painter while securing the snatch block to the ring of the buoy, and that done, the hawser is rove through the block, the pinnace cast off and towed back to the target—paying out if necessary the second hawser bent to the first.

The end of the second hawser is brought to the target, snatched in a block (secured *well in* from the end of the target), and then it is manned by the target party, and the target hauled up till close enough to the lee buoy for spring hooking the lee pendant by men in one of the steamboats. The other boat, if required, would help the target party by towing round the lee end of target towards the buoy.—A dreadful lot of 'target' in the above paragraph, but I hope the reader is able to follow me.

NOTE :—If it is necessary to use two hawsers.—When the bend of the hawsers comes to the snatch-block on the target, the hawsers will have to be hung by a stout jigger and strop outside the bend while the hitch is being cast off, the hawsers re-rove, and the ends made fast again the right side of the snatch-block. For this reason the hitch in the first instance should have *plenty* of spare end, and as afore-stated, the target snatch-block must be secured well in :—This is only one of a hundred ways of hauling a target out. Every Captain has different ideas, but they are one and

all governed by the application of common sense in conjunction with the present, and constantly changing conditions of wind, tide, or sea.

Now for the moment let me digress.—I have just been endeavouring to show how a target may be prepared for battle practice ; may I also say a word here as to what further precautions might be taken to perhaps ensure full success for the actual firing when it takes place. 'Tis said that on these occasions commanding officers should display the greatest care and solicitude for the comfort and well being of the superintending officials ; and that amongst many things, they should always have the services of a steam boat (with *cushions*) placed at their disposal when proceeding from ship to ship, instead of being carted about in a vulgar cutter with nothing but the point of the hook of the after slings for the senior umpire to sit upon ; and of course the accommodation ladder must not be forgotten.—For the birds whisper.—With what truth !—that every three steps of the ladder mean one more point to the score in each case of what would otherwise have been a disputed hit. Doubtless this may be so !—But all this we did, and more so, in a good ship that I commanded—even to the extreme lengths of port wine and sandwiches.—And although no one could gainsay that we had hammered the target to some tune, when the final results came to hand, our souls were neither possessed in peace or contentment ; and we wished that we had given the sandwiches to a cell prisoner, and sent the port wine to the sick bay.

If desiring to moor a 16 ft. × 20 ft. target—or one of somewhat similar dimensions—in a tideway, do so from one end only. Again, it is far wiser not to have the strain of the

moorings on the target (which would bury itself), but instead on to a strong floating buoy made up of three rum casks lashed together, and the target then rides comfortably to the buoy. When wishing to weigh the moorings, it should be done by means of a distance-line with one end secured to the mooring rope well down below the casks, and the other lightly hitched (for casting off) high up on the fore end of the target.

To lay down the target, follow this method.—Have the cask suspended from a quarter-deck davit, and the moorings (a launch's anchor backed up by old fire bars) hung right aft with slip and toggle. Drop the target from forward, and when well aft slip the buoy ; then later, when all is away well clear off the lee quarter, let go the anchor.

When picking up the same, do so from the ship. Steam up from to leeward, and devote all energies to grappling the distance-line ; and this done (with the bight on the forecastle), either cast off or cut from the target according to weather. Do not bother at all about the target, but *weigh the moorings* during the moments that the ship is over the anchor, or otherwise you will lose it. As soon as the anchor is tripped, then play with the target after lying it snugly to leeward, when with derrick or crane it will be all plain sailing.

If a high wind is blowing, and there is danger of a target capsizing when dropped for practice ; instead of hoisting a whole sail, only put on strips of canvas, and also fly a a couple of big flags on the ends of the frame work—it's better than nothing.

WIRELESS CODE FOR REPORTING THE FALL OF SHOT WHEN MARKING FOR ANOTHER SHIP — AS USED IN "SWIFTSURE"

Thus :-

A 12" Projectile falls 300^{x} short — Signal is '12 T. G'.

A 9·2" Projectile fails 450^{x} over — Signal is '9 T. V'.

A 6" or 7·5" Salvo falls from 200^{x} short to 300^{x} over — Signal is '6 B. Ito S'.

It should be remembered that a buoy or small cask target which has its steadying weight below water rigidly attached to it by a staff, &c., is more stable than one with such a counterpoise hung by hemp.

Working in company with another ship in gun practice for marking purposes, etc., is a far more satisfactory arrangement than doing so from your own boats.—In fact it is of no advantage at any time to have boats in the water for the lighter target work. Sea in the Channel rises apace, and directly boats are down the 'cares on the bridge' are bound to increase. Again, strange as it may read, when a long ground swell is running and boats are down, their crews are apt to suffer to some extent from *mal de mer*, and are in consequence unable to thoroughly do their work. And many a time and oft have I looked down from the high and steadfast bridge on the lifting boat below, and seen the woe begone face of one who 'wished he was dead,' and whose lips seemed to murmur but too truly :—

"There's a queer kind of an up and down motion,
"That comes from the treacherous ocean,
"Which has inspired me at length with a notion,
"That I never was meant for the sea."

When putting on a light jackstay for heaving two buoys together in mooring a light target for gunlayers tests, &c ; as before, make fast your wire to the weathermost buoy, but do not forget before you do so, to visit the lee buoy and secure a distance-line to it, by which to haul yourself back in the boat—this is most important ; and when wire is fast, roust it taut with luff upon luff, or heave the two buoys together with a steamboat at the end of the wire—racking at the nip.

If required to lay down from a ship a line of 'running buoys' off a target ; first, hang all three buoys right aft over the stern by strops and toggles ; then devote every energy to dropping the centre buoy in correct position. To do so, approach the target at right angles to the line you wish the buoys to be laid ; and when in distance, most carefully drop the middle buoy from aft—of course taking into calculation the distance of range finder from taffrail.—The drift of buoy-rope should also be accurately measured off, and must not be more than one fathom longer than the depth of water at the time. After the centre buoy is properly laid, turn away and steam up the direction of the run, i.e.—heading for the centre buoy and parallel to the line of the target ; and on arriving in position (by simple bearing and distance of target), drop the first outside buoy—again taking into consideration the drift between the suspended buoy aft and range finder forward. This done, continue your course past the centre buoy, and when the two laid marks are in one, and the distance and bearing of the target correct, let go the third and last buoy—and hope for the best.

NOTE :—If in the first instance the centre buoy has not been accurately laid down, and weather presses you for time ; place the end buoys in position by bringing the target on the necessary bearings and dropping at the calculated distance.

On taking a large class of ordinary seamen through their firing with sub-calibre at a light target for the rating of able seamen, put three targets on the jackstay ; and let three men fire on each run, shifting all sails from boats on every completion—also individual scores should be signalled.

Towing target practice appears to be dying, but when is being carried out in a fleet, the ships that are steering the original course (before the practice commences) are the vessels from which the stern and beam distances are kept.—Ships hauling out for a disabled target should do so at the end of the line, or they will mask the fire of other vessels :—

Distance should always be corrected at the turn.

When towing a target with a long drift of line out, the target at one point of the turn is practically stationary ; and it is at this particular time that you must be careful to keep your distance on the ship ahead, or the line of vessels will assuredly lengthen out.

It is not necessary to hoist the "Q" flag immediately a ship puts her helm over, but only when the angle gets dangerous, and the ship has swung—say six points.

Thirty-five degrees before or abaft the beam is about the safety angle for firing at a target, and decks should be chalked at that bearing.

There is another method of carrying out towing target practice besides the one just mentioned, and it is used when it is necessary to avoid wasting time on a passage. Ships then work in pairs backward and forwards on each other's beams, each pair is twenty-five cables ahead of the next, and all are steering the same and requisite course. Then suppose the fleet has steam for say twelve knots. A normal speed for all ships is given as nine, and the pairs of ships tow their respective targets alternately past one another, by decreasing

to six knots or increasing to twelve as required.—It is better to arrange beforehand (in each pair of ships) for one vessel to work the cone and be the directing ship.

When lengthening out for this kind of target practice, the rear ships should stop and drop targets *at once*, and go on again when the headmost pair of the fleet have gained their proper distance. There is a regular table in the gunnery manual for the drift of towing line in connection with the particular nature of the gun being practised.

Towing targets do not differ from their other brothers in their constant endeavours to drown and turn bottom up, and unless the target is a very big cumbersome one, floats, floats, *plenty* of floats on the line is the only remedy—and the wire close to the target should be especially well buoyed.

If a towing target wire carries away, do not—as I have seen—try and under-run the wire from the ship with the target lying under the quarter, but pick up the target *first*, and then haul the wire in from the ship.

In working on the sides of a square round a drifting target in company with another ship which is also firing and marking for you; a rough guide as to when to put the helm over for turning at each corner, is when the target bears two points abaft the beam; but if there is a wind, and the target is sailing, you must stand on longer on that course when the wind is with you, so as to correct the beam distance of the target on the next course. If this is not done, when you turn, you will find the target sailing right down on your weather beam. To avoid this, the helm should not be

put over when on the previous course before the target bearing is three points abaft the beam.

Remember that whenever any target bears before the beam the ship is closing it, and *vice versa*.

The most advantageous conditions for a ship to fire at a target is when the sun is behind her and the wind blowing on her engaged beam—provided there is little sea.

At target practice it should always be borne in mind that the smoke from the funnels is a most powerful factor in upsetting 'spotting.'—The stoker should therefore withhold his hand as much as possible during the actual firing.

When picking up a free target from a ship at sea, *invariably* time to catch it on your weather bow ; let it sail on to you with the wind while you hold the ship, then grapple, and when fast, go astern and let it cross the stem (as it will immediately do when clear), then go ahead again, and let the target pass aft the lee side and hoist in where convenient.

When dropping a target, always give the ship a good touch of opposite helm to the side you drop it, so as to swing the stern clear.

In dropping a target at night for practice, run your required distance by time leaving the target dead astern, then put the helm over and bring the target on to the beam ; and the guns into action after the search lights have picked it up.

For this work, i.e.—Picking up objects at night—I think top lights are infinitely preferable to the bridge or

netting lights, for the beams of the latter only interfere with the men's eyes at the guns and the look-outs on the bridge.

It is good practice for the men at the search-lights to make them at times switch off altogether, then alter the target bearing, and let them find it again.

If at any time it is required for a division of ships to drop a number of targets in line for some night practice, here is a method.—Form the division in line abreast and let every vessel have a target free to drop from each quarter. To the first target that has to be dropped attach a Holmes's light. When all is ready, and the division proceeding in station under steam, fire a Very's light as an instant signal to let go the first target (say the starboard one), and at the same time the ships all swing four points to starboard ; then, by signal, turn all vessels twenty points to port, and as the ships pass between the illuminated targets they should drop their second targets independently—judging the line. The division then steams on, and as soon as the Holmes's lights are burnt out, exercises against the targets as required by arrangement.

Anchor Work.

MANY are the methods of mooring with the fleet, but I maintain that such silly tricks as letting go both anchors practically together, for the sake of unfairly breaking the 'one pendant' before others, stamp those concerned as bouncing lubbers; and if bad weather should come on, their ship (riding by the bights of her cables) is all over the place,—to the common danger of those who are unfortunately near her.

In all anchor work, the great thing is to have the cable deck not too crowded, and the men who are there, accustomed to the cables and kept in order—the very noise of a big chain clattering out, like the report of guns, has some upsetting effect on the nerves of many men. Quickness in unmooring is of more importance than the same in mooring, for one never knows in war time where it might be necessary to get immediately to sea after coaling, or provisioning, &c.

Remember both in mooring and unmooring, that the ship's engines judicially worked can do wonders in expediting matters.

As a rough guide for correct position, allow three quarters of a cable from the middled spot for letting go the first anchor, but the exact distance for different ships can always be worked out on the mooring board. When anchoring on another ship, her jack staff (if in bearing) is the best mark to anchor on, provided she is middled.

If ever you have to run in at right angles to a line of ships already moored and you are to moor with open hawse to prolong that line ahead, you should let go your first anchor when the stem of the leading ship (the vessel you are anchoring on) bears two points before your beam—it is a difficult evolution this, and the slightest mistake in distance capsizes the whole show. Again, there is another most awkward situation; and I refer to the time when it is necessary for your ship to come in and take up a berth between two vessels already moored which are swung at an angle to the line of bearing; with the ship, whose bows you have to cross, ahead of her station. There is only one thing to be done here.—Have plenty of way on, and when close across the stem of the hindering ship, put the helm right over to get the first anchor anyhow down on the line, then hard the other way while the first cable is running out—to bring her head up again if possible before downing the second anchor.

In all cases when middled, in spite of apparent slight loss of time, it is a wise thing to make sure that you are in your proper berth before putting the swivel on; and if out of bearing, ask permission to adjust position with the cables, as a shackle one way or another with heavy cables makes but little difference as to safety.

Calculations as to depth of water when mooring with heavy cables may be practically ignored.

Some Captains never bitt, but I think that when anchoring in anything over twenty fathoms it is better to do so,—although others say you may drag your anchor.

If your second anchor is dropped in the wrong place it is not inadvisable to pick it up, and provided you are able to work the ship without moving the first anchor, to drop it again in the right spot—but it generally saves time to go out of harbour and have another try.

Cables, as I have remarked elsewhere, should not be snubbed.

With a slack moor, and consequently a sluggish swivel, the cables will probably at once get foul below the cup ; therefore before unmooring go astern with the engines and pull the turns out, otherwise when you heave in, the bridles will come up lumped together like a bunch of cat's meat, presenting a sight—as the boatswain says—'something too disgustable.'

On waiting for the signal to unmoor in a fleet, it is a nonsensical practice to heave the swivel inboard before the signal is down with the idea of stealing a march on other ships, and it is not a bit smart—but in spite of stringent orders, this is still sometimes done under cover of dark winter mornings ; though the clang of the in-coming chain, or stroke of the hammer busy with the pins, generally gives the would-be clever but daft ship away.

It often saves time when unmooring to change anchors, especially if there is danger of the fluke of one anchor hooking the cable of another.

When unmooring, take it as a rule to pick the leeward anchor up first.—In a tideway the downstream mudhook *must* be the first to leave its bed. In all cases of unmooring

in a gale of wind or high running sea, take the swivel off the weather side ; for otherwise when the bight of the weather cable runs out, the jerk may part the chain.

Steam for slow speed should always be on the engines when unmooring in a fleet ; for if one ship is a little late and another perhaps too previous, it's not impossible to get too close.—Notice the way that a vessel will gather when shortening in a long scope of cable in smooth water and no tide.

In a narrow river with a strong tide, it is sometimes found necessary (for harbour-room) to moor the ship so taut that the swivel has to be dispensed with ; and in this case the hawse should be cleared at low tide and slack water—it is wonderful how soon this becomes routine.

Note :—(Referring generally to light craft).—Should a vessel have to moor in very shallow water, with little between her bottom and the mud at low tide ; she should be careful to have enough length of cable out to enable her to swing *between* her anchors, for otherwise there is always the danger of her settling down on the upper fluke of one or other of the killicks and knocking a hole in her bottom.

Should your hawse by chance have a cross (the most awkward foul of all), and you want to get underweigh—it will be found expedient to change anchors for the time being.

A 'clear hawse shackle' is a big iron shackle fitted with a tongue and a slip, with an eye at the joint through which to reeve a hemp or shackle a wire.—Nowadays the

'joggle' has replaced the more cumbrous clear hawse shackle, it being altogether a lighter and more handy fitment for most cable work.

As before, always clear hawse if you can at low water. Put your joggle shackle down over the knight-heads and hang the non-riding cable below the foul ; then pass a small wire round the riding cable in the opposite direction to which the turns are taken in, unshackle the non-riding cable, and secure the end of your wire to the outboard link, heave in the hawser, and by man-handling and a little skill, the turns will come off clear (veering slightly or heaving in the riding cable often helps) ; then shackle on the cable again, knock off the joggle, and lo !—The sun will shine once more.

For expediency, it is quite feasible to lay out a stream anchor in a cutter in ordinary weather, but it must be weighed by a pinnace or launch.

If you part your cable, unless the buoy is watching and you know *exactly* where the anchor is, *diving is wasted time.*—Sweep till you hook it, and having hooked it, send a diver down the sweep and bend on a light hemp hawser with which to heave the ship over the anchor. This done, slide down a wire with the shackle round the hemp, secure to the anchor and weigh the sulky truant *from the ship.*

When sweeping in a tideway, you must get the boats up stream and come down with the tide, and the sweeps must be heavily weighted—the same applies when creeping for a cable.

An anchor is said to be 'a cockbill' when it is secured by the ring to the cathead ready for letting go (now replaced by a new position) i.e.—hanging at the hawse pipe secured by the slip. It is 'apeak' when the ship is directly over the anchor ; 'short stay' when cable and (imaginary) fore stays are in line, and 'long stay' when the cable and main stays are at the same angle. To bend on a buoy rope, pass a running eye over the end of one of the flukes, take a hitch over the other and seize.

When lying at anchor with a great length of cable out in a tideway, you can sheer the ship almost anywhere with the rudder, but you must only use the *smallest helm* and must be very careful not to get a swing on.

If a squadron of long ships have to come to a single anchor in a roadstead where they may get tide-ridden and swing in opposite directions, and it is also necessary for them to ride to a long scope of cable ; it will be found that a greater distance than two cables between their anchors is desirable to ensure the peaceful night's rest so needful for the health of the Captains.

If picking up a buoy on a flood tide, especially if sea room is limited, it is sometimes a good thing to turn the ship short round by dropping an anchor near the buoy and clear of its moorings. Then run your hawser out to the buoy, weigh the anchor and warp, or steam up without the use of a hawser.

On coming to single anchor in a tideway, give the ship a good sheer with the helm as you let the anchor go, and lay

out your cable so that she comes back to her anchor more or less on the bight,—should the tide be strong it will be also necessary to move the engines ahead to ease the strain on the cable as she straightens out on the anchor. On a dark night in a rushing stream, it is somewhat difficult to know that you are doing your best to help your cable; the hard part is to gather what your ship is moving over the ground, as you cannot judge by the water.—Any lights on shore which bear anywhere near the beam, will be found of great assistance.

Cable should always be ranged with the inboard fake leading straight from the navel pipe.

The meaning of 'backing an anchor,' is to shackle a smaller anchor to the cable of the larger one, and drop it by veering—it assists the bigger anchor from coming home on the rising gale.

To get a spring on a cable, take the end of a hawser (wire) out through the quarter-lead on the side on which the anchor is let go and shackle it to the bower cable, heave taut, take a turn, and then veer away forward.

On a fleet unmooring and proceeding to sea directly after ships are shortened in, it is always best to give at least three quarters of an hour for the evolution of 'off swivel' and shortening in to short stay. This extra fifteen minutes ensures there being no laggards; and when the signal is made to weigh, there are no lame ducks left behind to spoil both the Admiral's temper and the look of the departing fleet.

Although I have never practised it, it is quite legitimate in a long and bad turning ship, to give her head a start in

the right direction by moving the engines and partially snubbing her round by the cable before the last anchor is tripped.

A cable is measured through the link.

Length of cable	$12\frac{1}{2}$ fathoms.
A cable's length	100 fathoms.

An anchor is tested by two processes.—First the anchor is tried for cracks and flaws by heating different portions in a furnace and then pouring on water, and secondly it is subjected to the hydraulic rending strain in the test house.

When rigging a hand capstan, mind the bars are lifted as the carpenters bouse the hitches taut. The proper method to man a bar, is to place the arms under the bar and the chest on top, and heave with the weight of the body from the legs.

When weighing an anchor by hand, it should *never be forgotten* to unrig the capstan after the slip is on, and before surging—recollect main deck capstans are out of sight.

A stud-link is no stronger than a plain one—the only object of the stud is to keep the cable from getting kinked.

On surveying cables, weak studs are replaced by fresh ones which are heated and 'drawn out' inside the link, and afterwards 'caulked.' Forelocks in the tongues of the slips in the chain lockers should be secured by wire seizings.

A stockless anchor has a flush anchor shackle with no forelock, but the shackle is fitted with two pins

which are driven into the bolt in opposite directions—this for safety.

In lubricating bolts and pins of shackles, only tallow should be used and *no white lead.*

Here follow half a dozen words on mooring from Commander Hugh Sinclair :—

As it is very difficult sometimes to put on the slips quickly, it is found that great assistance will be rendered by fitting a bale sling strop composed of 2½ inch wire of suitable length, one end of which will be shackled to the bitts, the other end being rove through a link of the cable and the bight put over the tongue of the slip, which is then secured in the usual manner.

Plenty of handspikes, pinch bars, etc., should be provided.

The men should shift into a dirty rig before mooring, and *every man* should carry a stout strand to assist in working cables.

On a main deck, the swivel should be triced up by the centre with the four legs hanging down so that they can be easily manipulated.

A 4½ inch wire mooring pendant with a joggle shackle in the end should be rove through the hawse pipe of the first anchor let go, round the bows and in through the opposite hawse pipe, the joggle shackle being taken aft by the navel pipe.

When it is required to moor, the joggle shackle is put on just abaft the required shackle of the lee cable, i.e.—If

mooring with six on each it is put on just abaft the sixth shackle. The sixth shackle is then veered right out of the hawse pipe, the 4½ inch wire brought to the capstan, and the sixth shackle hove into the opposite hawse pipe :—

Care must be taken that the parts of the cable are clear or you will shackle on wrong.

Also a good look out must be kept over the bows when heaving in to surge the wire when necessary, and to make certain that too much strain is not brought on the mooring pendant as the capstan always heaves faster than the cable-holder can veer.

And now to bouse this chapter to :—Remember that in all matters concerning the manipulation of cables, although all responsibility goes to the senior cable officer under the Captain ; still, more than half the battle—and that part which gives smartness, and success to the work—rests on the broad and willing shoulders of the 'blackie' (blacksmith) and his crew.

To What Concerns the Midshipmen

"Obedience is the soul of the Navy; he who has not learnt to obey, is wanting in the first essential of command."

How often have I, like other officers, been written to from some parent or guardian something after this fashion :—

"I am so anxious to get my dear boy Jack into the Navy; he is just cut out for a sailor"—they all are!—"&c. &c., and is so keen; he goes up for his interview next month. Will you kindly help me to get him in?"

Good friends!—Neither my humble self or the most influential powers can now assist in this matter. Whether your boy has the honour to join the Service or otherwise, depends entirely upon yourselves— his physique, his manners, and how you have brought him up.

My only remark to you is.—That if the 'hope' has an open face and the bearing of a young gentleman he is likely to get past the dread ordeal. Tell him to smile,—I don't mean the impudent grin of precocity or ill-breeding—and the committee may perchance beam back, and look kindly on him to his future advantage.

Schoolboy who has passed his 'interview.'—If it has not been your habit before, learn from the moment that you place the King's badge on your bows, to look your superiors eye to eye and squarely in the face; and begin to get your shoulders back.

Fond Mother—and I am going to be brutal.—If it has not been your previous custom to watch carefully over a certain matter, whisper to your late schoolboy that on joining His Majesty's sea service, tooth brushes and nail scissors are well known for their utility :—

N.B. Tell him also, that sand and canvas have before now, in obstinate cases afloat, performed the duties of the former *necessité de la toilette.*

Proud Father—it don't cost much.—Have your boy taught to ride ; the most healthy and nerve producing exercise there is. A bicycle is cheaper than a pony, but many and many opportunities for fun are lost in the Navy to the boy who has been denied the Englishman's heritage—commune with the noble animal ; and to the man later, the one spot on earth from which he can shout—'Begone dull care!' is from the back of a galloping horse. How well do I recall to mind a dreadful shock that I once received in the "Britannia."—It was, and is, the custom there for the officers to ask some of the cadets in on stated evenings for a glass of port, generally with the idea of finding out a little more of their tastes ; and on such an occasion I asked a certain cadet if he could ride—it being a stock question of mine. He said,—"Oh yes he could ride, and was very fond of it." I then enquired.—"Have you a good pony, and what hounds do you hunt with?" He replied—"Oh *Sir*! I don't ride a pony, I ride a bicycle."

Very curious were some of our conversations with these boys ; especially with those who had lately come from school. I remember one cadet opening our conversation with a query

as to 'whether I was fond of white mice.' I forget what I replied, but his mind was evidently running on mice, for he shortly after plastered me with this riddle :—

Q.—"Why is a mouse like a haystack?"

A.—"Because the *cat-tle* eat it."—

He was a good boy, and as fond of the beagles in the "Britannia" as he was of his mice at school ; and concerning these beagles, let me tender one word to the town bred cadet. Although you may perchance appreciate the beauties of nature, you know *nothing* of her ways ; therefore take my advice and quickly learn to love her by hunting through the deep coombes and over the fair hill sides of Devon in the merry weekly hunts of the "Britannia" beagles.

I don't mean you to swell the ranks of that brigade whose 'belly is their god ;' and who only fetch out to the meet when the scent of coming food is in their nostrils ; but join up with the active ones who run, hunt and laugh for the very joy of the thing, and to whose ears the cry of the driving pack conveys nothing but music and delight :—How well I remember once being cheeked in a most amusing manner by one of these former 'stodge hunters.' I was late for the meet, and in cantering past a body of cadets 'bent on buns,' I hailed them.—"Come on you boys, the farmer has a hare sitting for you." And this was what was squeaked out to my back.—"Please sir, on how many eggs?"—I never stopped to find the little jester out, but doubtless he is some lieutenant on the list now, and I confess I should like to know him.

To touch on training ship discipline.—As a cadet you cannot do better than to clearly understand that the expressed wish of the Lieutenant of your Term should be to you an order and your law. If at any time you are unhappy, know that in every man-of-war—and the stone frigate of the college is such— there is a 'court of appeal' to the very humblest member of the crew.

Bullying in the training services has happily quite disappeared, but every dog has his day; and it is only right that the older cadets should have some small harmless privileges over the more lately joined. The definition of a bully.—Is a big, or little, beast with a coward's heart.

Midshipman afloat.—When first you go to sea you will at once begin to realize that no one seems to care a hang whether you are there or not. The reason is, that your talents, if any, are quite undiscovered; and as time goes on you will quickly find that it entirely remains with yourself as to whether you spring up at once like a mushroom to the commander's notice, or else lie as some earth nut, with gifts unknown, beneath the crust of the gunroom world.

Seniority amongst midshipmen counts for little—you are all tarred with the same brush; and the best snottie gets the most responsible jobs.

Lessons to be learnt are.—Never have to be told a thing twice.

If you don't understand an order it's better not to say so, but get it quickly explained by *someone else.* Obey your superior whatever the order, never mind how unnecessary you, in your foolish mind, may think it to be.

On being asked a question never say you don't know—it may be incorrect—but chance something ; and if your reply proves to be wrong, go back and say so.

Think well of your personal appearence, and abhor those hideous tobacco stained fingers from smoking rotten cigarettes. For your health's sake remember physical exercises, and do them daily with all thy might.

Be neat and tidy with your things, and do not have your gear slinging about the gunroom at all times. The most correct midshipman I ever knew used to label everything. But he carried his methods almost too far ; for one day when some of us curious ones were overhauling his irreproachable locker, having found it for once unlocked, we came across an old biscuit tin which was docketed.—"Empty box full of stones,"—he was of a geological turn of mind.

A midshipman's boat and gun should be to him his prime interest and delight ; and as an example for ambition in good boat sailing, I can but recommend to you the conditions of a certain match which took place in Besika Bay in 1878 between two cutters of H.M. Ships 'Alexandra" and "Sultan." Each commander swore his midshipman was the better sailor ; so to prove it, a ten mile sailing race was arranged, and the commander of the ship whose boat was defeated was to paint and gild the aft deck of the other—in those days a matter of fifty pounds or more.—The "Alexandra" won.

Touching your gun—be it a heavy 12 inch or only a little 3 pounder, tend to its wants as carefully as you would

to those of your favourite sister, and to your eyes it should be just as beautiful. If your gun is defective—think well,—from the battery one tooth is withdrawn, and by such is lessened the might of the ship.

A hint about your logs.—Never mind how small the plan or chart may be, make it on a piece of paper of the same dimensions as the whole page of the log. It makes all the difference to the appearance of the book when it is eventually bound in that smart cover that we all know.

Again, during your final examination for the rank of lieutenant, refrain from arguing with one or other of your examining officers; also when reeving the fall of some main purchase, do not pass it through the lower sheave of the beef block at the foot of the mast, up through a single block in the cap, and down through the upper sheaf of the beef block, —as was done in a paper of a certain midshipman in the Channel Fleet 1907.—Have reasons also for all verbal answers.

White gloves should adorn your hands at Sunday divisions, and brown ditto make you smart as you guide the small arm company past the saluting point.

During coaling operations the midshipmen should invariably work the winches.

When mustering men, always call their Christian names; and in telling men off, it is never necessary to catch hold of a bluejacket's sleeve.

While on watch know all things; learn what a swab tail is, and remember that you cannot stop the head of a

"Snarleyow"

(Resurgam)

hammock on taut to the gantline without a rolling hitch.—Never warm the bell.

No midshipman should be at sea who has not read 'Midshipman Easy' and 'Peter Simple.' We have all enjoyed the story of the triangular duel in the former—the anecdotes about midshipmen and their prowess with the scatter-gun are endless even to this day,—but I think this little tale originating from the flagship at Lamlash in 1907, is also truly funny.

One of the midshipmen had been given leave by the noble owner of Arran to go and shoot where he listed. He, the midshipman, has got a gun and cartridges all right, but he was told it was useless going out without a dog. Such being the case, that universal provider—the gunroom messman—was ordered to get a dog. The messman went on shore, but returned saying that it was impossible to find one—and what kind of a dog did the midshipman want? In reply he was sternly told to produce 'any kind of a dog'—the midshipman did not care, and that he was to go ashore and try again. This time a dog appeared. The sportsman went out shooting, but such sights on the hillside on the 12th August has never before been seen—even the old cock grouse could hardly fly for laughing; for whenever the midshipman put up his gun to fire, the dog jumped over it—there was a travelling circus round the corner.

Be not forgetful, although I think forgetfulness in the Navy is a lesser evil than absent-mindedness—for any disaster might befall a ship in the fleet during the reign of an officer of the watch who kept his vigil under the impression that the

bridge was built in the clouds. Accidents by the score in times gone by have of course occurred through this serious disease of wool-gathering, and reference to any of such is better left unwritten ; but here is a case which fortunately was neither accompanied by loss of life or shipwreck, and I must speak of it as one of the most amusing incidents that I ever witnessed.

A rubber of whist—it was before the game of bridge—was being played late one night in the wardroom of one of Her Majesty's ships anchored (in a manner in accordance with true biblical seamanship) in a fair haven of Devon. As the hour drew on, the players becoming hungry, sent for a little solid refreshment in the shape of sardine sandwiches—which were duly made and placed on the card table. It was our friend's turn to lead. He was not *always* silent ; but for the space of the last half hour no word has passed his lips, and now in apparent deepest thought, long long he pondered what to play. All patience was indeed well nigh exhausted, when he slowly but by lightning stroke relieved the silent tension ; for solemnly placing a card in his mouth he played a sandwich * * *

Whistling on board a man-of-war is out of place and is not allowed. I found this fact out many years ago in a corvette, when one of the midshipmen who was gaily trilling forth sweet bars from that well-known maritime opera 'Who will kiss her fairy lips when I 'm away at sea,' while dressing at his chest before seven o'clock drill, was sent for by the first lieutenant ; and as he, the midshipman, saluted, he was asked if he had got a piece of string, and if not to look alive

and get a bit. He flew and return breathless with some twine. "Now;" said the first lieutenant.—"You were whistling a moment since. Take that string and tie your tune up to the main bitts; then go yourself and stand on those bitt-heads for the forenoon watch; and mark well when there, that the melody is not secured with a slippery hitch."

Midshipmen have to stand, and rightly too, a lot of chaff ashore, but I think the days of ridiculing on land the ways of the Navy are over. It generally emanates from good-natured ignorance; and it should always be borne in mind that it is impossible for those not brought up afloat to ever know much about the sea; and therefore if you feel at any time that you are getting upset by some discussion, think of the following little story, and läff.

Bluejacket Bill had arrived in England from his first commission of many years on a distant station. He had risen from a first class boy to the proud position of No. 1 of the fore royal yard; and on that station such a smart upper yardman had never before been known—ten seconds from inside the topmast rigging to the parrel was his time; and who did not know upper yardman Bill!

The first night at home Bill was sitting in the bosom of his family holding forth for the hundredth time about his beloved royal yard. It was little his patient relations knew, and less they dared to inquire, about the one pet subject; till his aged grannie, unable to contain her curiosity any longer, interrupted by saying:—"But Bill, what is't t' royal yard?" Poor Bill!—He in his simple mind had thought that the whole world must indeed have known about his

precious charge.—The gentle query was but a brutal blow unheedingly dealt.—Down came his pack of cards as the fame of his idol was shattered ; and with hot rage consuming his manly breast, and thinking he was once more argufying with a topmate in the mess, he turned with withering scorn to his doting family and exclaimed—" Wot is a royal yard !—You arsk me wot is a royal yard !—'Aven't I been a telling of yer all along abowt a royal yard ! Fact is, yer don't know ! !—Yer don't want to know ! !—And wot is more.—Yer all too blankety lazy to larne ! ! !"

Here young gentlemen is a warning none too early concerning the far future.—In your later Service life, if a signal is made to your ship either at sea or in harbour,—perhaps finding some fault—acknowledge ; but whether it is deserved or otherwise, reply not at all unless *an answer is desired.* If you think its purport was unjust, clinch your hand in your pocket, and after the sun has gone down once, make the explanation in some other way than by signal.

And now my boy we will coil up ropes in your chapter by suggesting that you should mark well these concluding words :—

During your career through the Service, gather that you belong to a generous profession ; and that although every-one cannot reach the very top of the tree, merit is invariably recognised. Each midshipman starts with a gold hat in his private till, and should a man not succeed to the higher ranks it is generally his own fault. There is an old saying in the Navy, that " Every man gets his chance."—You must therefore be clever enough to realise when that opportunity arrives,

and having well grasped the fact, make the very most of it, and *stick at nothing* within Service bounds. Never be afraid of responsibility. Do not growl; and shun a grievance as the plague. Be happy in your work—for the Service loveth a cheerful temperament; and lay to heart these well-known little lines :—

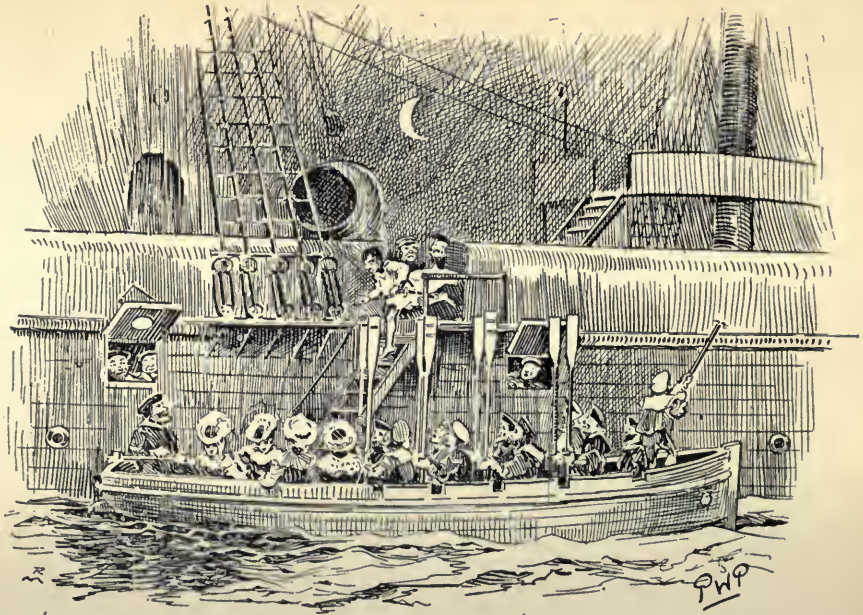
"Laugh, and the world laughs with you;
"Sigh, and you sigh alone."

Boats.

UNDER the above heading I shall venture no word on the high finesse of boat racing—for much to my regret I have not the ability—but simply confine my remarks on this subject to ordinary service boat work. The knowledge here is gained from five years' experience as a boat midshipman, followed by nine years' weary watch keeping as a commissioned officer; and my words must be taken for what they are worth.

To deviate for the nonce.—I suppose that by far the happiest time that an executive officer spends in the Service is the period when he, a heedless, healthy, strong-nerved boy, serves as a boat midshipman; for responsibility (often it is very great) rides light on his shoulders, and all is novelty. Hard times may indeed come, but every sort of experience is constantly cropping up; and what a journal many of us might have kept had we been so minded. And here let me glance off and give one little story as perhaps a sample 'tale of a boat' such as might have been written in mine,—for the experience (to my cost) fell to me.

I was a midshipman (aged fourteen) of the 2nd cutter of a corvette. My Captain was giving a dinner party to some charming ladies, I brought them off in my boat, and it was my further duty to take them away. The dinner lasted long, and the night wore on as the Captain cracked his jokes. I was



Duty before Decency

very weary, and my hammock was *very* close, consequently temptation soon proved too much ; so after making the cabin-door sentry solemnly swear that he would rouse me when the boat was called away, I off with my clothes, nipped into bed and was immediately sound asleep—I had previously taken the precaution to hang my dirk and belt to my head clew. What happened next I do not clearly know. I have a dim recollection of being rudely buffeted by the quartermaster, while his hoarse voice shouted in my ear.—" There's a fine old breeze on deck sir !—The Captain's ladies are in the boat awaiting to shove off, and the orficer of the watch is a singing out for you mad, and no mistake." It was enough * * * * I came to my proper senses awakened by the horrified screams of the ladies in the boat *below* as I dashed down the gangway *above* their heads clad but in my night shirt with tails flying in the breeze. One word.—All modesty had apparently not quite forsaken me even in my sleep, for dirk and belt (my badge of office) were tightly girded round my slender waist :—That base old sentry ! He continued to go ashore in that fair port of Alexandria ; while I ?—Well I *somehow* stopped on board.

The great fault with beginners in boat sailing, lies in their generally keeping the boat *too close to the wind.* Again, the sails are seldom properly hoisted or the sheets trimmed. In a launch or pinnace the lee runner is never sufficiently overhauled, while in a cutter the boom topping lift is invariably in the same state.

In foul weather on a wind, a bad boat's crew will always be seen crowding right aft in the boat, shoving her stem in the air and making it impossible for her to lie up.

Neither will any boat sail with the weight of men at the extreme ends ; the crew should be well distributed in the body of the boat, with one man only forward in the eyes of her to look out to leeward under the foot of the fore, or head sail.

Remember that live ballast is always preferable to the dead article ; and while on this subject of ballast, I recollect once asking a pugnaciously inclined naval cadet in his seamanship examination on leaving the " Britannia," the question.—Why a boat's crew sat down on the bottom of the boat when under sail. He promptly replied.—" Please sir to get out of sight of the enemy !"

When boats are away sailing, the men should not be allowed to stand up when staying, dipping yards, &c.; and the signalmen should keep their eyes on *all* boats away during strong winds and squally weather.

To cross the bows of a senior officer in a boat whether under oars or sail is inexcusable.

No service boat, whether under sail, steam, or oars, should ever hamper the movements of a man-of-war which is either entering or leaving harbour.

To set a gaff topsail in a boat.—First pull the halyards close up, next roust down the tack, and then haul out the sheet—which should have play.

When coming alongside in a boat under sail—calculate for the bight of the boat-rope, don't think too much about the gangway, for assuredly if you do, one day it will be 'bump oh'; and then down to the bottom goes one of the commander's badges, and up to the masthead you *used* to go.

It might be remembered with advantage, that a boat under sail reaching off to a ship and having to go alongside her the far side, will save time by crossing the bow and *wearing*, instead of standing under the stern and tacking—besides the former procedure is more seamanlike.

When boat racing and preparing to cross the line, be careful to have your oars in and the boat under manœuvring sail at least two minutes before gun-fire, or you will be disqualified. When actually racing, only pay attention to your own boat—leave the others to take care of themselves, and use them only as indicators to shifts of wind either in direction or strength.

On coming alongside in a steamboat, remember the swing of the stern when the engines are reversed—on one side of the ship the boat will fly into the gangway, on the opposite side the reverse will happen.

If going alongside a ship in a strong tideway and there is no 'scotchman' across the fore side of a gangway, put the boat's bows *only* up to the lower platform.

When a ship is in a berth (not billet) i.e.—moored head and stern, it is quite permissible for a boat to come alongside (either under oars or sail), in whichever manner it is most seamanlike or convenient, according to the state of the wind, sea, or tide.

One way to find the rough centre of a boat for calculating the placing of her false keel, is to lie her off the gangway on a perfectly smooth day, and by working a piece

of line from the gangway to different parts of the inner gunwale of the boat, you will eventually find the spot which when you pull the line, will bring the boat bodily broadside on to the ship with her keel parallel to the fore and aft line.

On getting underweigh under sail in a boat, always hoist your sails for casting *before* tripping the anchor; and walk the grapnel aft on the weather quarter just before the anchor leaves the ground.

Should you be in a boat under sail and being taken in tow by a steamboat, do not be in too much of a hurry to shorten sail. In a cutter, lower the foresail, luff her up, and top up the mainsail.

When working to windward, and provided no current is present, you may take it as a rough guide that any object which bears approximately on the weather quarter will be weathered on the next tack.

A note not generally known.—When beating under sail in a boat and towing another, as you put your helm down make the boat being towed sheer away on your old lee quarter, and it will ensure your not missing stays.

With a dipping lug, it is usual now to dip the foremost yardarm of the foresail, the halliards being rove (from the purchase) from forward aft.—When dipping the after yardarm, the lead of the halliards is reversed.

Do not forget when running with a lug sail, to shift the tack to the bow-hook; also always give the order "lower and dip" when wearing, just before you are stern to the wind.

If sailing in a service pinnace close reefed and there is a lumpy sea running, trying to stay is wasted time; but take long legs and wear. When doing so, commence to haul the main sheet aft again *directly* the boat is stern to wind, keeping the fore sheet flowing till she has rounded up on the other tack.—Sea room is required for wearing, so with danger to leeward, put the helm up in plenty of time.

Should a boom boat under sail, heavily loaded or otherwise, get into trouble through a fast rising breeze, recollect that instant relief can always be given to her labours by scandalizing the mainsail, i.e.—dropping the peak. Again, there is another method of easing her.—Keep the peak halliards fast and let go the throat, but this way applies best when the wind is on, or before, the beam.

It's a nice set off to the appearance of a service launch or pinnace lying at the boom or away under canvas, if she is rigged with a small jury topmast, and a little vane above-all to dance upon the truck. Boom boats' masts are better oiled than scrubbed; and wooden rings for the luff of the mainsail to travel on, are preferable to iron ones. In these boats also a stout pudding—as a rule skilfully secreted under the head-sheets—is useful to protect a stem, when under sail certain 'occasions' arise; and during a commission, such a fitting may easily save many hours of ploughing the sands for the patient chippies, as time after time with much monotony they repair the battered noses.

No boom boat should be left made fast with her gaff hoisted and sail in the brails; neither must a steamboat burn her side lights while unemployed.—Both faults point to sloth.

In heavy weather and a 'soldier's wind' will permit, there is no reason why a boom boat should not be sent away with her fore staysail bent to the mast as a storm sail; or again, a cutter with her reefed mainsail hoisted on the foremast.

The wooden casing that partially secures the heel of a boat's mast is known as the 'tabernacle;' and the fore and aft thwarts that strengthen the sailing-thwart are termed the 'scarping.'

Boatkeepers should be kept in all boats except skiffs and dinghies, and they should always haul their boats up to the booms when officers are coming alongside or shoving off; or again, up to the taffrail if lying astern and an officer passes. Boatkeepers do not stand up to salute in boats with awnings spread, and after saluting they should be careful not to turn their backs on a passing officer, but remain facing him till he is well by; neither should boatkeepers lounge about in their boats.

Boats awnings are always spread and furled with the ship's awnings, but in windy weather they should have their awnings down.

On boats lying at the boom in a tideway—a useful contrivance to keep them from surging from side to side and thereby knocking themselves about, is to veer the boat's canvas bucket astern with the mouth upstream, and the force of the current running into the bucket will keep the boat's stern steady.

Boats should never be dropped alongside by boathooks or after guy, either when manning, or in going to their falls—

the galley's crew are the worst offenders when hauling up. They should always move under the full complement of oars, with the exception of perhaps the bowmen.

A midshipman or coxswain of a boat must not allow the man with the after boathook to catch hold of the top of a brass stanchion on a gangway, for that is how they are quickly twisted and wrung off.

All oars in double banked boats should be in pairs and trimmed according to the thwarts. If a double banked boat is away pulling through the fleet when the colours are hoisted in the morning, the oars must be tossed—a single banked boat lies on her oars while the midshipman salutes.

The midshipman of a boat manning, should be on deck before her crew ; but if it has come to his knowledge that his boat has only been called away to pick up the Captain's bull-dog which has fallen overboard, some little latitude might be granted him if he is behind hand, through deeming it advisable to nip down to the steerage to pull on the first pair of sea boots he sees.

Coxswains of boats should man their boats *themselves* over the boom, and not stand gaping at the gangway waiting for a slack boat to be dropped alongside.—The is a new and lazy fashion now rapidly coming in with the times, and Admirals' coxswains often require gingering up in this direction.

If a boat is not manned smartly, the boatswain's mate should not be allowed for *one instant* to bawl out 'hurry up

there, etc.'—there is no greater sign of a slack ship; but fall the boat's crew in *when they come back*, and punish the laggards.

Boats should always lie well off when waiting on a ship, and never allow a boat to remain alongside for *one moment* with oars tossed—this is dangerous in a seaway, and is a most lubberly practice at any time, though often committed.

Do not allow any boat to be lowered without a boatswain's mate, and before lowering, he should know that the plug is in, and also the men should be *sitting* down in the boat—lower a boat *roundly* and *square*.

Men away in duty boats should invariably have their boots with them, and care should be taken that they are properly dressed and clothes brushed.—Officers looking down from the quarterdeck or gangway on the dirty caps of a strange boat's crew are apt to draw their own natural conclusions.

Should a boat away from a ship be pulling badly, or if under sail she is being slovenly handled—the coxswain of the boat should be reported, and if a junior officer be in charge, he should be brought under the immediate notice of the commander.

Every pulling boat away at night should *without fail* carry a white light (screened only at the back) on a stanchion in the extreme bows of the boat.

It never looks well in a fore and aft boat in charge of a midshipman, for one of the ship's company—postman, etc, —to be sitting alongside of him. Again, no steward in mufti

should ever be allowed to pull about in galley or gig without the coxswain steering—the reason is obvious.

Always have a boat manned for bathers *before* sounding in, and swimmers should not be allowed abaft the foremost gangway or far away from the ship.

If a boat (blood boat, etc.) is away getting stores, the men and everything for clearing her (jiggers hooked on, etc.) should be got ready *before* she gets alongside, so that there is no delay; also in the case of steamboats, have coal bags always kept ready filled on deck to be taken when required.

In steamboat manœuvres, a boat's length is considered as forty feet. "close order" is two boats' lengths apart, "open order" is four boats' lengths apart. The painters of all boats should be marked with a piece of bunting at equal length from the stem—it's ship-shape for towing purposes.

For pulling boat manœuvres, columns of boats are a hundred yards apart; and in the columns, boats are close together bow to stern, with twenty yards between the last boat of one ship and the leading boat of another.

When manning and arming boats, men should not stand up in their boats. Gear should be well stowed, and all arms etc., placed in beckets under the thwarts; and do not forget that a boat slightly delayed alongside when manning and arming, but shoved off with gear well and handily stowed, is more efficient than one that has quickly got clear of the ship, and has the men struggling to pull their oars amongst a heap of quarter-cases, etc., chucked in anyhow.

When lowering a gun into a boat invariably have the hook of the lower block moused.

The proper place for a boat's anchor is on the port quarter.

On manning and arming, colours are generally hoisted unless otherwise ordered.

A boat's compass box should always be trimmed for lighting, and should also contain a box of safety matches.

Waving an answering pendant by hand from a boat to answer a signal is unpardonable.

The sea-boats have each a rifle and a 'sea-boat's box,' which contains a Very's pistol, red and green Very's lights, and sixty rounds of rifle blank— the rifle and boxes should be kept in the boats (at sea) day and night.

In steamboat manœuvres it saves great 'flag congestion' to have a second little signal mast forward.

With small-arm men landing in a boat by companies, it is best to have the *left marker in the bow*, the left half company in the fore part of the boat, and the right half company aft; then in the case of beaching bows on, the left marker is the first man out of the boat and the company can immediately form on him.

Contents of a Boatswain's Bag.—Canvas, palm and needle, twine, cable punch, and cold chisel.

Contents of a Carpenter's Bag.—Fearnought, chalk, grease, nails, set of tools, strips of copper for oars, corks and plugs for stopping bullet holes—sheet lead for stopping leaks.

Contents of a Surgical Bag.—Bandages, lint and tourniquets, etc.

Contents of a Boat's Bag.—Lead and line, oar lanyards, spun-yarn and marling spike, ensign, pendant and answering pendant.

The ensign and pendant staff of a boat should be of *uniform height*, and the pendant a short one.

A towing strop should be fitted to every steamboat, and is most useful. The strop is simply a wire span with a served eye each side, which eyes go over the quarter-cleats; and there is a towing hook in the centre between them—the span divides the strain, and makes all matters of steering, &c., much easier. This towing strop can also be fitted in one piece—without the eyes; when the bight of the span is simply dropped over the quarter-cleats and allowed to render freely round them.

I think the best way to tow a light boat from a steamboat in foul weather or otherwise, is to have no one in her to steer, but rack her right up to the steamboat's stern on a rope span rove through her bow bolt and made fast to the steamboat's quarter-cleats.

A good method to protect a boat from damage when there is a lot of heavy towing to be done—landing troops, &c.,—is to encircle the gunwale with one complete turn of an 8″ hemp hawser—if it can be procured; also fit large puddings on stem, bows, and quarters. A steamboat under

ordinary conditions when steaming in a thick fog in congested waters, should always have a large coir fender slung on the stem.

It should never be forgotten that in bad weather the very lightest boat in tow of a steamboat makes the latter labour badly in rising to the sea.

NOTE :—I should like to speak here of a curious mishap to a service picket boat in a very heavy sea, which rendered her quite unserviceable for the time.—As she was thrown over on her beam ends she exposed her condenser inlet, the air got in and formed a cushion between the condenser and outlet, and consequently no water could be admitted and the condenser got red hot.

When wishing to launch a boat in deep sand or mud, do not attempt it with the boat on an even keel, but throw her on to her bilge using the oars as skids.

A good plan to ensure the hoisting of a boat square, is to have the separate falls so marked (by bunting a couple of fathoms from their inboard ends), that when the falls are hooked on and taut, and the bunting marks together, you know at the same time that the boat hangs square in the water from the davits. The method for finding the place for these marks, is to stretch the falls taut along after the boat is hoisted close up, marry them, and then place the marks in abreast one another.

To pass a boat's life-line.—From the davit head *under the hook* of the slings, over the davit, under the hook,

over the davit, haul back on all parts, then round-about turns round all parts and hang on to the end.

To turn a boat in with swinging davits.—Clear away the davit guys and pass the life-lines, after, ease up the falls to them ; haul aft with the boat's falls and turning-in lines, then forward, and when the davits are swung in, catch a turn with the falls and off life-lines, then lower away into the crutches.

On taking a hawser to a buoy to make the end fast for any purpose ; pull well up to the buoy before tossing the bow oars in, then instead of messing about with boathooks, one of the bowmen should nip on the buoy with the boat's painter and make it fast to the ring of the buoy ; with the boat thus secured, it is easy enough to manipulate the hawser.

When hoisting any boat in or out by derrick at sea or in a tideway, she should invariably be at the end of a boat-rope led from well forward. In really bad weather it may be found impracticable to keep the slings in a picket boat owing to the weight of the iron eye, and also the danger of men being hit by the derrick block, and in that case it is better to lower the slings down already hooked on to derrick purchase, and let the crew do their best with the legs in the boat.

Here is a hint.—If there is much motion on the ship when wishing to hoist a boat in ; *immediately* the weight of the boat is taken to leeward, go full speed ahead with the lee propeller and get the ship head to sea while the boat is coming in.

When a steamboat is running in shoal and tidal waters, she should always carry shores with her.—I recommend four broken ash oars cut to proper lengths, with one end of each shore weighted, and the other so rounded as to take neatly under the sheer of the rubbing strake.

In contract built ships the splices on the derrick purchase should always be stripped and examined—the splice should be formed by the ends being tucked back, not as a sailmaker's splice, which is apt to draw.

It is sometimes thought a good rule for steamboats *always* to have their slings in the boat ; many precious moments are often saved by a sinking boat (which has met with an accident) being able to get the slings ready whilst making for succour. Again, and it may appear an old womanish precaution, I think that all steamboats should invariably carry on board some means for repairing a hole—such as a hammer, some nails, a square of No. 1 canvas or fearnought, and a sheet of copper or lead.

If misfortune comes along, and a heavy steamboat gets sent to the bottom, though in a moderate depth of water ; when she has to be raised, especially from a ship, 'go slow.' It's no waste of time to make at once three or four long wire bale sling strops, with lengths for all purposes to pass round the boat.

First :—Locate the boat.

Second :—Heave the ship over the spot.

After the boat is found, send down the divers again, and let them endeavour to get at least two strops, one forward and one aft, around the boat—and if possible lash the strops together in a fore and aft direction to prevent slipping. When the strops are on, the matter of lifting the boat must be governed by circumstances ; but probably a $4\frac{1}{4}$ inch wire from the main derrick for one end of the boat, and another $3\frac{1}{2}$ inch wire led through a heavy block at the head of a short strong pair of sheers, and taken to one or other of the capstans for the other extremity, will be found satisfactory ; but anyhow, at least be careful that the strain on one wire does not act against that on the other.

When once the boat shows above water and there is an opportunity of getting at her—plugging holes, etc., and pumping out ; hang her to the ship and keep her there till you are *sure of her.*—Leave this precaution out, and should anything then happen, you well deserve to be hung yourself.

After,—if the boat will stand it—get the weight taken by her own slings ; but if not, a lighter must be secured, and the wreck eased down into her for conveyance ashore.

When answering a hail from a ship to a boat and you are not going alongside—reply "passing" instead of "no, no." Hailing is much overdone, and nothing is more objectionable to the ear than the constant bawling of a young signalman or youthful marine airing a raucous voice.

Midshipmen *ought* to see their boats cleaned out as well as hoisted, but such customs are often winked at now.

No one should have charge of a boat who does not know the necessary salutes and marks of respect due to his superiors ; and to repeat once more a well known truism.—"The smartness and efficiency of a man-of-war can *always* be correctly judged by the appearance of her boats, not only when under oars or canvas, but also in the matter of their cleanliness."

NOTE :—A midshipman who manœuvres his boat well, will invariably work his ship with credit from the bridge in later days ; and in this matter I venture to state, that beyond certain laid down rules which must always be followed, the manœuvring of a boat or ship is simply a matter of judgment of eye combined with (to use a horsey expression) knowledge of pace.

One little hint here to help the eye of a naval cadet in his earliest days, which may be laughed at, but nevertheless I give it for *I know* it helps.—Try and bring your boat, however small, constantly alongside the gangway of your ship *with only one helm*. For instance, in turning up to the starboard gangway from ahead, put your helm to port when you consider the right time has arrived to round her up, and ease it when you wish, but never let the tiller come amidships *or to starboard* till you get alongside.—You will make some shocking bad shots to start with (and the officer of the day will probably think you are mad), but it is wonderful how soon you improve. Nothing looks worse than a boat coming to a gangway with the individual in charge see-sawing the tiller or yoke lines like a pump handle ; and believe me, a man who cannot put his boat alongside in a seaman-like manner will *never* handle his ship with nicety.

The following is perhaps nowadays an unnecessary caution, for dhow chasing in boats is, I suppose, an excitement of the past; but incidents in the ocean's story book may always re-occur; and therefore, if so employed, beware of running alongside a dhow to leeward. For if you do, so assuredly will the Arabs lower their great sail on top of your boat, and you and the crew will be underneath it, enveloped like bagged foxes in a sack, to be promptly speared through the canvas.

Single flag signals for boats away marking and repairing a target at gun practice:—

Flag A Lie farther from the target.
„ C „ nearer the target.
„ D „ off target—to port.
„ F „ „ „ —to starboard.
„ G Turn as ordered.
„ H Go a little faster (If stopped—proceed).
„ J „ „ slower.
„ K „ much „
„ L Stop.
„ M Turn 16 points to starboard.
„ N „ „ „ „ port.
„ O Alter course a little to starboard.
„ P „ „ „ port.
„ Q Steer zig-zag course.
„ R You come too near ship on zig-zag.
„ S You go too far on zig-zag.
„ T Clear the range as soon as possible.
„ U Return to the ship and bring target with you.
„ V Return to the ship.
„ W Anchor near target.
„ X Target wants staying.
„ Y Target wants securing.
Flag Nl. 1 Lengthen tow.
„ 2 Shorten tow.
„ 3 Increase distance from ship.
„ 4 Decrease „ „ „
„ 5 Examine target, reset sail, report hits.
„ 6 Repair target, report hits.
„ 7 Unmoor target and take it into harbour.

Single flag signals to boats away for torpedo practice :—

Flag **A** Torpedo has failed to run.
„ **C** Torpedo has run away.
„ **D** „ is ahead of you.
„ **F** „ „ astern „
„ **G** „ „ to starboard of you.
„ **H** „ „ to port of you.
„ **I** Buoy position of target.
„ **J** Search for bubbles.
„ **K** Search for torpedo between target and from whence it was fired—or in direction indicated.
„ **L** Stop engines and lay on oars.
„ **M** Steer more to starboard.
„ **N** „ „ „ port.
„ **O** Lie nearer the target (with negative, further from it.)
„ **P** Lie to windward of target (with negative, to leeward of it.)
„ **Q** Steer straight on.
„ **R** Return with torpedo.
„ **S** Remain near target and look out for next torpedo.
„ **T** Drop target (with negative, pick up target.)
„ **U** Drop mark buoy (with negative, pick up ditto.)
„ **V** Next run will be from starboard tube.
„ **W** „ „ port tube.
„ **X** Tow target faster (with negative, tow slower.)
„ **Y** „ „ slower (with negative, closer up.)
„ **Z** Turn as ordered.

NOTE :—When boats are away picking up torpedoes on a bright day, if possible let them have the sun behind them when observing the run, to avoid the shimmer on the water.

Handicap for Private Rig Races.

(12 Mile course.)

Class	Description of Boat.	feet under	Allowed on a Launch min.	sec.	Time of starting min.	sec.
I	Whalers & Gigs	25	30	0	0	0
II	Whalers	25	25	30	4	30
III	Whalers	27	22	30	7	30
IV	Gigs	28	17	0	13	0
V	Cutters	26	16	0	14	0
VI	Cutters	27	15	0	15	0
VII	Gigs	30	14	30	15	30
VIII	Cutters	28	14	0	16	0
IX	Gigs	32	12	0	18	0
	Cutters	30				
X	Cutters	32	10	0	20	0
	Pinnaces	32				
XI	Cutters	34	8	0	22	0
XII	Pinnaces	36	5	0	24	0
XIII	Launches	42	Scratch		30	0

The "Officer of the Day" in Harbour.

'There is a place for everything, and everything has a place.'

I write these few notes on the 'Officer of the Day,' for I gather that the duty of 'Officer of the Watch' in harbour (except at night) has—with the ancient disappointed lieutenant—died away. Even in the days of mast and yards watchkeeping in harbour was at times a very weary vigil; and it was not to be wondered at that often the thoughts of the officer of the watch were a good deal more directed to the advent of eight bells, than as to what was going on with the work of the ship. The watch evolution aloft was about the only thing to really arouse his interest; unless it was the evening excitement of the arrival of the Skipper from his afternoon walk ashore, to swear that the starboard after guy was hanging in bights, or the fore royal braces were all flying away.—The royal yards have gone, but young fellow remember that the after guys *remain.*

Again, the officer of the watch in those days was solely responsible to the Captain, and was often a positive incubus to the commander; but the officer of the day of the present works under the commander, and if he is worth his salt can soon learn to be of the greatest assistance to him.

It should always be remembered that whether on the bridge at sea, or on the quarterdeck in harbour, the best officers are those who possess powers of observation, and having those powers *know how to use them* ; and bear in mind that it is the smart, quick, and if possible, *cheery* voice that gets the work done and the men to hop.

At all times when about the ship, the officer of the day should keep his eye lifting to rectify any signs of slovenly decks—nothing is too trifling to take notice of ; for although a small thing adrift may signify but little in itself, it's the *accumulation* of such, when left unchecked, that go so quickly to shew the want of supervision, which spells a slack ship.

Recollect that the Captain is always accessible night or day.

If a signal is made to the ship to enquire if the Captain is on board, do not reply (should the Captain be on board) till you have seen him and know his wishes.

The officer on deck should invariably know what the hands or watch are doing, and how employed ; that the routine is strictly and smartly carried out, and that things are *piped with the bell.* He should see that the watch, or part, are always named ; in short, he must *look ahead beyond his nose.*

To make the men learn to work together, always make them *run* ('double' should be a word scratched out afloat, it belongs to the Army) on receiving an order, and if possible keep silence, though in a West Country vessel this is difficult; they should also remember that there are two sides to every rope

Before any evolution (hoisting boats, &c.,), pipe the men required to fall in.

Support the petty officer in his lawful duty, and jump on him with interest, if he commits himself, but never if it can be avoided, publicly before his subordinates.

Make all midshipmen and coxswains of boats report their boats in a uniform manner—"manned," or "come on board"; also the duty for which they are required, or from which they have returned. Reports should never be made at a distance (from across the deck, &c), or shouted up to the bridge.

Always make boats sail if there is any wind.

If a boat is hoisted badly, lower her *once* and once only, it is *quite easy* to work up a slack watch without making things monotonous.

Should a part of a watch be employed in a job—hoisting a small boat, &c., and they do it in a slovenly manner; turn up the whole watch and repeat the process, and if that does not suffice, fall the hands in.

All boats at the davits should be square, and don't forget the boom boat at the cat-head.

While hoisting in stores, coal, or any weight, men should never stand in the bight or lead of a wire or rope.

When preparing for sea, and permission is asked from below to move the engines, look out that there are no boats astern.

Remember when a ship is being prepared for sea, to make sure that the stern ladder is up; and all securing of boats should be finished before the commander reports "ship ready for sea."

If it looks like thick weather outside, and the Skipper sends for you, prior to getting underweigh, to gather information; try and do better than did a juvenile lieutenant in the "Monmouth," a year ago in China. The Captain asked him if the fog buoy was ready; he replied.—"No, Sir, but I will send for him."

Directly after rain and immediately the routine will allow, the upper deck in all parts should be *thoroughly* dried up—not forgetting all sockets, bunker-lids, &c. If in the first instance this is not done properly, the part of the ship to which the deck belongs should be fallen in and the process repeated—captain of parts (in the absence of mate of the upper deck), should report to the officer of the day their duty completed.

The officer of the day should be most particular in his supervision that all marks of respect are properly paid on the upper deck, and that men coming aft salute the quarterdeck —and they should always leave it *at the run.*

Touching ship salutes, one cannot be too careful that the sentry on the forebridge, or forecastle, does his duty.—His salute from the ship represents the uncovering of the head from the individual—if he is discourteous, the ship suffers in manners; and in all case of doubt he should *immediately salute* without hesitation.

Quartermasters and side boys should never lounge in the gangways—how often one sees it ; and the officer of the day and midshipman should invariably salute a passing senior officer (plain clothes or otherwise) should they happen to be in sight, and the officer passes fairly close. Service letters and telegrams should always be taken by the officer of the day to the commanding officer, but private letters, etc., should be given to the cabin-door orderly to deliver.

It is a good thing to arm the quartermaster of the watch in harbour with a pair of binoculars.

All official callers on the commanding officer should be ushered in by the officer of the day, but the cards of private individuals may be delivered to the cabin-door orderly to take in.

The following officers should be piped over the side :—

His Majesty.
British officers commanding His Majesty's ships.
Officer of guard.
All foreign *naval* officers.

NOTE :—The piping of British and Foreign Ministers, and military officers of high rank, is for the sake of courtesy sometimes done, but it is not correct. Piping the side after sunset is *entirely* wrong.

When a large number of ship visitors are on board, especially Greeks and Turks, it is as well to keep them on the upper deck, as bayonets, etc., have a knack of disappearing. No foreigners or strangers of any sort should be allowed below the protective deck. Also see that an extra life-buoy,

with line attached, is placed handy on the quarterdeck, and that a couple of men are told off as a 'rescue party' while the sight-seers are about.—This tip I learnt at Liverpool, in 1907.

Again, before the invasion commences, arrangements should be made to keep the stream of humanity flowing in the right channels—hanging boards with arrows painted on them help a good deal, and certain men should be detailed off to move the multitude on. If visitors are allowed below, it is a good idea, for the comfort of the ship's company, to close one side of the mess deck every alternate day.

Trippers as a rule give but little trouble unless the steamer that brings them does not return to time; but I well recollect many years ago in the Clyde, when the Channel Fleet consisted of four ships and two Admirals; bother arising on board a certain vessel through our guests refusing to quit.

One man was particularly violent, shouting out, that he was a tax-payer, and that the ship belonged to him as much as to any one else; and he would leave her just when he pleased, and not before. Happily for the personal safety of all on board, an inspiration came to the boatswain's mate of the watch. He (the bluejacket) nipped up on the booms, out with his knife—sailors wore them in those days—and cut off a chip from the spare topmast stud-sail boom; then pressing it into the palm of the irate Celt he exclaimed.—"'Ere mate, that's your share of the "Minnetor" and a bit more besides,—now walk."– For once a Scotchman saw a joke, he laughed with the crowd, and all was peace.

When a ship's colours are daily half-masted for the death of some high personage.—At 8 a.m. the colours should be hoisted right up and then half-masted; and at sunset they should again be hoisted for the space of one minute before the—"Thank you, make it so!"—and their being finally lowered for the night.

When the Sovereign is on board any vessel the ensign and Royal Standard are never lowered night or day.

On firing a salute, be careful that the first gun is not fired till the flag is broken; and if the compliment is to an official in a boat, don't blow his cocked hat into the sea, but give him sea-room both for the sake of his ears and his nerves.

When returning several gun salutes made to your flagship from foreign vessels, return the salutes in the order that they are given. If ever there is any doubt about number of guns to a senior officer, give him *full value.*

No private vessel, whether a 'Senior Officer' or otherwise, is entitled to fire the evening or morning gun; it is a privilege only 'enjoyed' (?) by ships flying an Admiral's flag or Commodore's broad pendant.

Remember that on any marked shifts of wind at night, *especially in an open roadstead where a lee shore may come in,* invariably call the Captain.

When it is blowing hard, the lead line over the side should not be taut up and down, or it will give no indication of dragging. If at single anchor, the second anchor dropped under the forefoot with compressor back, is the safest detect-

-or of a ship's drifting, for then its cable will begin to 'speak' if the vessel starts to leeward. The officer of the day, the midshipman of the watch, and the quartermaster, should know at all times (fine weather or foul) what the glass is doing, and the direction of the wind.

Whenever an anchor watch is set, the cable lockers should be uncovered and all hammocks clear of the cables.

Remember later, when you become an 'officer of sole responsibility,' that whenever it is blowing, and you *begin to think* about letting go the second anchor, it is better to ease your mind and do so at once. The second anchor should always be lifted *if possible* before the hawse is foul.

On coming on deck blowing hard night or day, take a couple of bearings if feasible on either beam, and check them during your watch.

When sending a manual fire engine away.—The pump should be tried in the boat on the way on shore, and a field gun limber should always be landed to transport ; as although this deadly engine of warfare is fitted with trucks, they are so small, that if used, the whole affair generally capsizes over the first little obstacle, and is no more use than a portmanteau —do not forget the carpenter's bag.

Submerged flat doors, unless men are actually at work down there, should be kept closed in foreign ports.

Remember the signal books during your day's duty and night vigils ; and on your ship at any time receiving her 'sailing orders' recollect to remind the Captain to acknowledge them by signal.

While mentioning the subject of sailing orders—I remember once standing on the deck of a vessel composing one of a flotilla of destroyers in Malta harbour, and overhearing a bit of *real* destroyer humour. A destroyer's dinghy loaded to the gunwale by an enormous bag of spuds and propelled by an irritated sailor late for dinner, was battling with but scant success against a strong breeze right under our bows. My wag with his own 'hold' stowed, was comfortably leaning over the rail watching and smoking; and after stolidly contemplating this energetic scene (a combination of adjectives and gymnastics) for some minutes, he evidently thought it about time to put *his* oar in, and endeavour by some small suitable remark of his own to encourage the oarsman to still further efforts. So slowly removing his pipe, with feeling voice he hailed.—"Hi Bill!—Wot 'ave yer got there?—Sailing orders for 'ome?"—Bill's face was a sight to see, for his ship had only just *arrived* from home, which accounted for the fact of his being late for dinner, having being bounced by the lambs of the other destroyers.

To resume:—To pass a hammock gantline (girt-line) or clothes-line bowline—round about turns round the jackstay and the shroud, and the end clove hitched to the shroud.

When stopping on hammocks, mind their heads are taut along, and that the lower corner stops are hitched hammock to hammock; also when stopping on clothes, commence from forward piece to piece, and take care there are no 'holidays.'—Make the petty officers, under the midshipmen, responsible for these duties.

In the morning watch, and also during the day while clothes are drying or airing, constantly get pulls on the jiggers.

"Orders for tricing up clothes lines."—Referring to ships still fitted with lines between masts :—

1. Both watches trice up clothes lines—man the clothes line whips—bowline men stand by to go aloft.

2. Away aloft—trice up, as soon as bowlines are passed.

3. Haul out fore and afters—fore part forward, after part aft.

4. Down from aloft.

NOTE :—Upper lines should be filled up and hauled out first in all clothes lines, however fitted.

Always coil a rope down on the bight; and in the early hours of the morning watch it is strongly recommended not to *touch* any rope, let alone coil it down, over the Captain's head.

Men should not be allowed above the nettings when the ship is dressed.

When manning ship, men should keep their legs together and *cross their wrists*, they should all turn the same way when facing about—this is often forgotten.

The commanding officer should always be informed whenever a Flag Officer is afloat with his flag flying.

On the galley being manned for the Captain to attend a court-martial, the boat's crew should be in No. 2 dress, or its equivalent, and white hats. A Captain going on duty in his galley, always has his boat's crew in the duty rig of the day.

An eye should ever be kept on the side party, and except on special occasions, coming into port, etc., the punt should *be hoisted by divisions.*

Do not allow sweepers who are slack in coming to their duty to be sung out for, but pipe the watch fall in.

Never let sweepers sweep the deck against the wind, and make the captains of the parts see that after scrubbing decks, and before coiling down ropes (boat's falls, etc.), all drainings, bunker lids, and waterways are dried out—cleaning wood and bright work comes later. In washing down, see that the edges of the buckets or mouths of the hoses are *kept close to the deck*, as otherwise much additional labour is made through gun gear, shot, and clean paintwork being splashed.

After the decks are scrubbed, the copper punt should at once go round all scuppers, and if the ship's side is not fitted with lips to the scuppers, get the blacksmith at work as soon as possible.

When holystoning decks, it should be remembered that it is not the actual holystoning that brings the dirt out, but the hearty scrub that follows ; and always if possible holystone decks lightly before a heavy coaling, letting the sand dry on the deck—small holystones are termed prayer books.

I give no stations here for "on and off dressing lines," for few ships have yards now, and topgallant and royal yardmen are awa'; but whenever it is done, remember that the lizards are dogged down the lifts, that the tallest men are at the yardarm, and the remainder sized down towards the bunt—the place for the midshipman is in the fore part of the top.

It stills holds good, that when undressing ship there should be no strain on the downhauls whilst waiting for the order haul down, as it is extremely unsightly to see dressing lines bowed down at an angle between the masts for no apparent reason. While on the subject of undressing, when the classes take their jumpers or tunics off for physical exercises, dirty flannels or shirts should immediately be taken notice of—this refers particularly to the marines.

The officer of the day should know where the anchor buoy is, and if it is watching.

The signalmen should keep their eye on the stay-light at night; and in the case of a passing steamer in daytime which is likely to dip, the man should only *stand by*, and not go to the halliards till the salute is given. Nothing looks worse in these levelling days than to see the signalman of a man-of-war standing with ensign halliards in hand expecting a salute, and the 'tramp' steams by with her colours untouched and her snout in the air.—Shade of the brave old days, when even foreign men-of-war on meeting a British ship used to lower their royals in acknowledgment of what we possessed then, and still we trust maintain, the 'Sovereignty of the Seas.'—Our Navy is not bellicose.—It stands on the

contrary a mighty instrument for peace ; and may the day be therefore far distant which might cause this crushing factor of power, to fall like a thunderbolt on the back of a certain half-fledged eagle, which at times seems so anxious to try and fly, and bruise its young talons on the armoured breast of poor battle-worn Britannia.

The midshipman of the watch should keep the windsails trimmed, and see that they are piped down on the approach of heavy rain ; he should also have hatchway and gun covers placed in *plenty of time* before wet weather sets in.

When awnings are spread, the earings and lacing should be kept well hauled out, men should not be allowed to walk on the awnings ; and in the case of a shower (when it is unnecessary to slope awnings), the earings, etc., should be eased up.—The signalmen should also be jumped on if they do not slack up their halliards.

On spreading double awnings, get the upper set on the stretch first. On furling awnings, the great art to ensure a good furl is to have the ridge-rope *taut along the deck* ; and in rolling up, men should roll up with all their weight, commencing with a taut skin, and two hands to every stop—the piece of wood pierced with holes and a dumb sheave, through which the ends of the crowfoot reeve for supporting the ridge-rope of a long awning, is known as a 'uvron.'

It is a good rule for the officer of the day when he reports noon to inform the Captain if any boats are away.

When liberty men are being inspected prior to going on shore, any men with unkempt heads, old cap ribbons, or slovenly clothes, should be fallen out and 'permitted' to remain on board.

In sending liberty men ashore for a long distance in open boats in wet weather, it is not stretching the point too much when oilskins are scarce, to have a few spare hammocks passed down for the protection of the gold badges.

Liberty men should understand at all times, that breaking leave when the ship is in an open roadstead, and under the liability of having to go to sea at short notice through stress of weather, is a far more serious offence than so doing when she is berthed in a snug harbour.

On inspecting the picket prior to landing, see that their patrol badges have been scrubbed white and clean.

Constantly keep in your mind the existence of a night boat's crew ; and as an accomplishment, all midshipmen of watches should be instructed how to lower a boat smartly by the falls *themselves* ; so that when the moment arrives to drop a night-boat in harbour, the officer of the watch and quartermaster can have her in the water by the time the boat's crew have got their eyes open,—after this, they, the men, should slip down the falls and life-lines—the latter lines being always kept on for the night-duty-boat in harbour.

In every well ordered ship, one or other of the midship search-lights should always be connected by a switch to the bridge; so that in case of emergency the signalmen can at once get the light in action.

When search-lights are burnt in harbour in conjunction with other ships for illuminating purposes ; on the light being steadied, it should remain so in the *fullest sense* of the word.

Never speak to a drunken man, or repeat an order given by you (or anyone else), which has once been disobeyed. —A defaulter brought before the officer of the day should always take his cap off.

The black-list men should never be unemployed during punishment hours.

And now a few words—perhaps of little moment—on winding up this chapter. Officer of the day, as you move about the decks doing your duty, endeavour to make those under you call things by their proper service names, and at all times express themselves in our well sounding seafaring language. The whole nature of the *matelot* is changing to his detriment ; and the general individual, for example, who persists in calling the upper bridge 'monkey island,' etc., cannot at any time plead the ignorance of the poor, panic stricken just joined, chaplain of the old "Pallas" who, when the mizen royal yard through the yardrope carrying away, came crashing down through the ward room skylight—skewering the table with the lower yardarm ; rushed up the hatchway wildly shouting to our first lieutenant, while the whole ship 'stood still.'—"Oh, Watson !—Watson!—The jib-boom has come down in the ward room."

Try as well to discourage at all times brother officers, petty officers, and men from making use of the new Navy

slang—'tie up' instead of 'belay,' etc.—I could mention dozens of such ; and then there is that senseless expression 'ang on.' Again, I have actually heard a torpedo lieutenant dismissing his men by ordering them to 'wash out.'

Also make the men stow their useless bad language ; especially that one horrible word that has but lately crept into the Service ; *it* should be taken instant notice of, if only for the credit and good name of the ship to which you are proud to belong:—

And once more, officer of the day in harbour,—mates of decks,—warrant officers, and all you who work directly under the commander, strive for your ship's smartness up to the very hour the pendant is hauled down.

Coaling Ship from a Collier.

I will head these remarks written by Commander Hugh Sinclair of the "Leviathan" with a respectful suggestion to our constructors that on every vessel being built, it should be decided on which side she should invariably coal from a collier (unless under some impossible conditions she is obliged to use the other); and on this being done, all facilities to expedite her coaling should be *most carefully* thought out, calling in the experience of some well proved sea officer.

Impedimenta on a man-of-war's upper deck there must always be, but let it be unshipable, and above all stowed in a convenient manner.—I well remember one contract built ship whose Temperley was landed *anywhere*, and the immovable hawser reels were stuck about like hat boxes on a railway platform.

In planning out the arrangements for the upper deck for coaling, the old saying that—'one hand overhauling the clewline is worth a dozen on the sheet'—might be remembered with advantage.—By which I mean, the leads of all whips should be clear and straight; good open spaces (easily prepared) for swinging and landing the bags, and particularly, the bunker lids should be in the most suitable places. Coaling ship is now I suppose our most important evolution, and it is a fact still quite unrecognized by the dockyards.

And now let me give the notes.—As soon as possible after commissioning, select the side of the deck which is the more convenient in every way, i.e.—that which is the clearer of fittings, and fix upon it as the side on which to coal ship; then improve it by removing or making portable all obstructions, such as:—

Overhead ash-rails.

Hawser reels.

Bunker lids, clips and fittings (in the narrow gangways).

Drums on the end of boat hoist, or motor winches.

Lockers, stanchions, etc., etc., which are in any way likely to obstruct the coaling dumps or gangways.

Prepare a plan of your deck (a scale of $\frac{1}{16}$th of an inch to a foot will be found convenient) shewing the position of all coaling derricks, coaling hatches, and coal shoots, etc.

The following gear is supplied for the purpose of coaling ship.

In charge of Boatswain.

Coaling whips of 2 in. steel flexible wire with malleable cast-iron blocks, shackles, etc.

Out-hauls for whips of $3\frac{1}{2}$ in. hemp (these require fitting).

N.B.—Admiralty colliers are also always provided with 4 in. Manilla for this purpose, which is preferable to hemp; but there is usually considerable difficulty in extracting it from the master or mate of the collier.

Stage lashing of $3\frac{1}{2}$ in. hemp for making bag slings.

Triatic stay to go between mastheads for carrying the whips or derricks (or both), according to the class of ship.

Fenders, coaling screens.

Large ships also carry a Temperley transporter complete with guys, slings, etc.—in care of engineer officer.

In charge of Engineer Officer.

Coal bags holding about 2 cwt.

Shovels (pointed or 'navigator' square ended).

Baskets.

Trollies.

Goggles, and canvas gloves (for patent fuel).

For a heavy coaling in a large ship, the following gear is required:—

At least 150 bags per hold in the collier.

At least 50 shovels per hold—or as many as there are hands to work in the hold.

At least 12 strops per hold; and *don't forget* to have a maul or firebars in each hold for breaking up the large lumps of coal.

Preparations for Coaling.

If you have not got a plan of collier, send and measure the length of her hatches and the distance between them.

Note also the state of her winches, derricks, and gear, and what beams require to be unshipped in her holds, and which side the winches exhaust.

Make a plan of measurements on paper (scale $\frac{1}{16}$th of an inch to the foot), and put the plan alongside the plan of your own ship: —

Work it about until the best position for the collier is found, i.e.—with each hold in the collier as nearly as possible directly opposite the place where you want to dump the coal on board your own ship; and with the exhaust from the winches, for preference, on the off side.

Note particularly where the after end of No. 2 hold in the collier (which is usually the hold nearest the bridge) is with reference to your own ship, and chalk or whitewash a large mark on your own ship's side where you want this to be, as a guide to the master of the collier.—Great saving of time in getting the collier alongside will be thus effected.

Rigging Coaling Whips.

Derricks are preferable to stays for working whips on account of there being less play, but they are more trouble to ship and unship.

The best method of working the whips in my opinion, is to work two whips on each derrick brought to your own (or the collier's) winches as most convenient, with a third ready rove as spare. These should keep a continuous stream of six-bag hoists going.

Five or six turns with the whip are taken round the drum of the winch which is heaving round all the time. As the bags are thus lifted, the out-haul is eased away until the bags are high enough to clear the nettings of your own ship, when the out-haul may be let go, and as the bags swing in, the whip should also be slipped, and the coal landed on the deck.

Men working the whips should always have canvas for their hands.

The out-hauls should be worked from the collier not from your own ship, as the latter plan greatly increases the strain on the collier's derrick.

Some officers prefer to bring the whip to the *barrel* of the winch which has been previously lined up to a suitable diameter. A standing part is made fast to the barrel, and the whip wound on to it, the out-haul being eased as before when high enough; in this method the winch has to be walked back to land the coal on the deck, which causes a lot

of delay unless the winch is a very good one, and the men well trained.

The following gear is required for rigging collier's derrick over *each* hold if using two whips :—

1 Luff for derrick topping-lift.

1 Luff for guy.

1 Jigger for any special purpose.

2 Leading blocks and strops for leading out-hauls to bollards in collier.

1 Wire strop for topping-lift at collier's masthead.

1 Wire strop for derrick topping-lift, and guy.

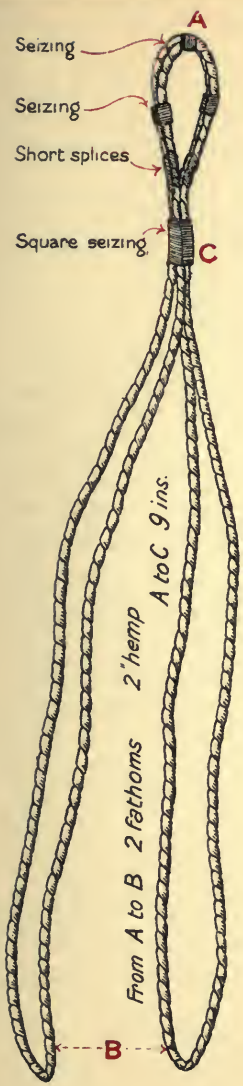
2 Wire strops for out-haul clump blocks on derrick.

2 Wire strops for gin block at masthead of collier.

2 Gin blocks for the leading whips to collier's winches.

12 Coaling strops.

Spikes. Spunyarn. Shackles. Chafing mats. Nets for bags. Split pins for pins of blocks. Ladders for getting men into collier.



"HEMP COALING STROP."

To take ten bags as recommended by Comdr. E. Carver H.M.S. "Swiftsure"

H.P. Cotton. Fecit

N.B.—If the second whip goes on to the centre of the derrick, additional topping-lifts and guys must be put on; and for this, jiggers will do.

If a third whip is kept ready rove, additional blocks and strops will be necessary for it.

Working Collier.

Rig the collier as rapidly as possible, and try to get a hoist in at once —this may save you a disagreeable night's coaling.

Rig the derrick before tricing it up, and use the steamer's whip to raise it. Trice up your own tackles, and haul the derrick well over *from* your own ship, hooking out-haul clump block on to derrick by a short strop—this makes up a little for a slack out-haul.

Fill up bags directly you get into the hold. Divide men into groups—don't change these groups in future coalings.

Let the whip work steadily round and never keep it waiting.

Dig round the side of the hold and leave the centre high, this allows the coal to run down into the bags and also prevents the bags swinging as they go up; again, it keeps the men clear of falling bags.

Dig big shovels-full, you have to lift a half empty shovel just as high as a full one, and the shovel's own weight is always there.

Don't shovel too far off from the bag, as otherwise half your coal probably misses the bag. 'Bag holders' should keep the mouth of the bag low until it is nearly full—coal heavers ashore keep the bag close down and shovel right into it.

A bag only requires one man to hold on to it.

Never heel the collier *from* the ship, as this increases the chance of bags catching under the hatches if out-hauls are eased too quickly.

Start easing the out-haul directly the bags are clear, and keep easing until ordered to 'let go.' Haul the out-haul quite taut so as to keep bags clear of the sides of hatch.

Be very careful in passing bags out, not to let them go overboard, as this causes the cry of 'more bags.'

Specialize for all berths, and don't change the men if it can be avoided. Keep on examining your gear, and always be on the look out for breakdowns.

Telling off Hands for Coaling.

INBOARD.

Tippers (2 to each shoot).

Trolley men.

Men for unslinging bags inboard.

Men for passing bags outboard into collier.

Bag repairing party.

Relieve sentries, and corporals of gangways.

Make out list of men excused coaling.

IN COLLIER.

Men for working whips on winches (2 each).

Out-haul men (3 or 4 on each).

Rounding-down line men (each whip).

Bag passers in collier.

Hands for working on in hold.

All remainder to be told off in gangs to shovel and hold up bags.

NOTE :—Since these few remarks on coaling ship were penned by Commander Sinclair, I believe that the "Leviathan" has broken all previous records by taking in from a collier (using only her own ship's company) 2400 tons at an average rate of 174 tons per hour.

When the officer goes with the carpenter to view and measure the collier prior to coaling, he should ask the master when ranging his ship alongside to put *her bow* in as much as possible (the stern will look after itself); also tell him not to drop his anchor too soon, as they generally make much ado over this evolution. Of course it is well known that if coaling at daylight, it saves much time to get the collier alongside, and whips rove, the night before; but if at any time, coaling or otherwise, she begins to work, and it is *not* war time, never mind the 'record,' shove her off—it's not worth it.

Too many nets cannot be used between the vessels to catch the coal bags.

Here at the end of this chapter, in this the second edition, I must make mention of two recent records made

by the "King Edward VII" (Captain H. V. Pelly) in the Autumn of 1907, and in February, 1908.

On the first occasion when coaling from the collier "Muriel Coverdale," and using her own appliances, she averaged 285 tons per hour on taking in 987 tons; and in the subsequent coaling, from the collier "F. Duncan" under similar conditions, the coal came in at the rate of 289·2 tons an hour on receiving 1180 tons. Neither must I forget to mention another meritorious performance i.e.—that of the "Illustrious" (Captain H. H. D. Tothill), which, on the same occasion that the "King Edward VII" did so well from the "Muriel Coverdale," took in 700 tons at the average of 262½ tons per hour.

The commander of the "King Edward VII" at the time of these evolutions was Commander G. H. Baird; and he has since done me the honour to forward for my criticisms some capital notes of his on this important subject of coaling. As the Service will certainly benefit; in return, I asked him to permit me to reproduced his remarks and suggestions, and here they are.—He says :—

The question of rapid coaling appears to me to have never been really studied, and even now it is in its infancy. There should be no doubt in a ship of this kind, when coaling from a vessel of the "Frances Duncan" class, that the average should be at least 250 tons per hour.

Rapid coaling of H.M. Ships being essential for the efficiency of the Service, no detail, however small, should be left untouched to ensure that the coal is shipped and stowed in the quickest possible manner.

The first maxim in coaling should be to get every single officer and man that can be spared, into the collier to dig out the coal.

It is often the custom to have various officers to assist in the traffic, but this in my opinion is quite unnecessary. The engineer officers are naturally more in touch with the bunkers and stowers, and also have in their minds more nearly the exact amount they hold; so they are by far the best men to run the traffic, with the commander supervising the keeping clear of all dumping grounds,—at each of which there should be a warrant officer. Every other officer should be employed in getting the coal out of the collier.

The second maxim, is to use every possible particle of power, combined with speed, for hoisting in the coal with the smallest amount of labour, so as to increase the number of diggers in the hold.

The following points will be found useful to attain your object, i.e.—*Rapid Coaling*:—

1. At the commencement of a commission the greatest care should be taken in working out the stations of every individual man, and once these stations have been arranged, every endeavour should be made to keep to them throughout the commission. Before actually coaling the first time, it is advisable to go to 'stations coal ship.' By doing this it is easy to find out the mistakes in the organization, and rectify them before your first effort. After one or two coalings it will be found that 'preparing for coaling' and

'coaling' run so smoothly that each successive evolution should be an improvement on the last.

2. Regarding a man's station for coaling, I think so far as the parts of the ship are concerned, it should be governed by his number in the watch bill, in the same manner as his boat; but with regard to front-page petty officers, marines, signalmen, and daymen, etc., they should keep the same stations throughout the commission.

3. You will find at the commencement of a commission, that there are various ratings who look upon it as a right to be excused coaling. Meet them with a stony eye, and say there is no such thing as 'having a right' when the coal has to come in.

The following is a complete list of men (maximum) who should be allowed the 'privilege' of being excused coaling.

2 Ship's Stewards	—	Performing ordinary duties.
2 Ship's Stewards' Assts.		
2 Ship's Corporals	—	On gangway.
1 First Writer.		
1 Chief Cook.		
5 Ship's Cooks.		
2 Cook's Mates.		
1 Chief Sick Berth Steward.		
1 Second Sick Berth Steward.		
2 Sick Berth Attendants.		
1 Chief Yeoman of Signals.		
1 Yeoman of Signals.		

Officers' Stewards and Cooks.
1 Sergeant Major.
1 Postman.
One third of the Wardroom Servants.

4. You will also discover that for rapid coaling the allowance of bags, barrows, shovels, and whips, is entirely inadequate. With regard to bags, barrows, and shovels, the only way is to borrow, but with reference to whips, it is a different matter, as nobody likes to lend whips, so therefore you must make more; and care should be taken that as soon as possible after commissioning, enough wire should be drawn to allow of their being fitted at the first coaling, with four separate whips to each hold.

The establishment of these various articles in a ship of this class is:—

Shovels (square) 120.—All required by engine room, except a few on the upper deck to clear coal away at the dumping grounds.—They are quite useless in a collier.

Shovels (navigator) 200.—About half required for trimming.

Bags. 750.
Trucks. 48.

Besides this, if coaling from an Admiralty collier, you have in her 400 bags and 100 shovels (navigator), but in an ordinary freight collier there is nothing. You must have a

total of at least 250 shovels (navigator), 1000 bags, and 100 barrows. Can you imagine 48 barrows taking the coal away when coaling at the rate of 300 tons per hour? With eight dumping grounds, that means 6 barrows to each place, each hoist consisting of 10 to 12 bags. The barrows are therefore not sufficient to clear away one hoist.

5. In working out your scheme for coaling.

(a). First of all see how you can rig your whips in such a way that the hauling part of each of the two whips at each hold is as high up, and as far apart, as possible.

NOTE:—As a general rule forward and aft, this can only be done by means of the distance apart of the blocks on the coaling stay or coaling derrick; but in amidships, the horns for securing the fore and main topmast rigging can often be used for one whip, and the main derrick aft and a coaling stay from the foremost head to the boat deck forward, for the other.

(b). In working out these positions, think of simplicity, and also what your scheme for coaling is to be.

1. Is it yard and stay?

2. Is it whip and outhaul?

These methods are governed by several things.—The disadvantages of (1) are:—

First.—You seldom have enough power engines available for working two hoists to a hold.

Second.—The speed of the engines.

The advantages are that weather does not effect the output of coal from the collier as far as your power is concerned.

The disadvantages of (2) are :—

First.—Weather

Second.—The question of being able to get the hauling part high enough up in the ship.

Third.—The number of bollards for outhauls.

The advantages are :—

First.—You are not handicapped by the number of power engines.

Second.—Given height for hauling part, it is faster.

Third.—It is easier work.

Taking all these into consideration in a ship of this class coaling from a collier, with three or four winches forward and aft, supposing all motors are in working order; forecastle and quarterdeck, should work yard and stay, fore and main top, whip and outhaul.

(c). Never let two whips from the same hold dump in the same position.—It only creates confusion among the unhookers, and will often cause a delay of at least a minute.

(d.) In arranging your dumping grounds, it often saves a jamb, if you can now and then when a 'block' appears imminent, place a hoist where it is not necessary to at once remove it. This can easily be done in the cases of the fore

top and main top, by putting it on the boat deck, but it is more difficult for the forecastle and quarterdeck ; then should there be a lull, this can be cleared away.

(e). Never leave anything to chance, and that is why I say you want four whips to each hold. Duplicate everything if possible, and then you can have no delay except through mechanical breakdowns.

NOTE :—A chance that is not often recognised is, that the donkey boiler of a large number of freight colliers will not supply enough steam to work all winches together. Always make certain of this before coaling, and if possible use steam from the main boiler.

6. Some say that it is immaterial which side you coal from—in this I do not agree. You might just as well expect a man who has bowled over the wicket all his life, to bowl equally well round the wicket.

Decide at the commencement of the commission which side you are going to coal, and stick to it. Your men then get used to their stations and know distinctly what to expect, and the barrow men understand exactly what turnings to take.

7. A clear upper deck means a lot. Some object to moving heavy weights, such as 9.2″ loaders, 6½″ wires, etc., out of the way ; but after one or two preparations for coaling, these are moved in the ordinary course of events, and take very little time.

8. Always arrange to have the same winch-men every time you coal if using ship's labour for this purpose ; and be

very careful that they thoroughly understand the winches of the collier before commencing to coal.

9. Habitually fill from the sides of the hold, leaving a mound in the centre for the empties. Good organization in filling, means a large saving in labour, and bags must be so placed as to save time in stropping, and should never have to be dragged about the hold because strops are found to be too short.

NOTE:—Strops should be long enough to take a minimum of fifteen bags.

10. The organization of a hold should be such, that the hoists should be ready at the same instant as the whip. The greatest care should be taken that nobody is ever kept waiting for a whip.—The moment waits occur in the hold, it is all 'UP' for a good coaling; once a man has a chance of sitting down, he can never put the same energy into his work again.

11. Always have your stations made out so that the moment the collier comes alongside, and while her derricks are being topped, the party of coal bag fillers go at once into the hold and fill bags. Never have more than ten full hoists to each hold, for more than that is worse than useless, as the full bags get in the way of the fillers, and when the 'commence' is sounded, every one is standing easy.

12. Be sure and give the men a good breakfast before starting, otherwise you can never get the same work out of them.

13. Every officer should personally test each of his whips; he must be always watching them, and be instantly ready to make a quick change when signs of wear and tear are apparent. Never wait for the break, but shift before it can occur.

14. Never try to work your first few hoists too quickly. See every detail correct, everything working smoothly, and then go full speed. Most breakdowns occur in the first half hour, and then demoralization is the natural results :—

And with this last injunction Commander Baird concludes his observations. Perchance before these lines are in print, some haughty rival will have smashed the proud vaunt of the Channel Fleet flagship—but so be it; the result remains the same.—It's all up to the 'Ship and the State,' and does the best of good to the Navy. Therefore, let's 'live and let live,' and 'the devil take the hindmost.'

It's a curious feature about this 'coaling ship' in the Navy. For instance, such and such a vessel may go blundering on making bad records time after time, till all are 'tired,' and the commander's heart is indeed sore within him. Then suddenly one fine day, through some unexplained circumstances, the coal has apparently managed to come in at a better average. Immediately up go the tails of the men, and for the remainder of the commission—be the collier suitable or otherwise—the ship will never look behind her, and always play up to conditions fair or foul.

Again I wonder!—Do officers and men in a bad coaling unenterprizing ship, ever realize the fact that making

continuous heavy weather over this unavoidable and important evolution of coaling, may one day spell for them the fateful words 'too late'; at a time when the smoke of the enemies' burning vessels will be all that speaks to them of that great general action which they were destined never to see.—To share in which, as a birthright, they have long toiled and slaved in the past; and now in the bitter present, would gladly give their disappointed lives not to have missed.

Illuminating Ship.

As soon as possible after commissioning, particularly if there are any Royal visits impending, the illuminating circuits should be fitted. There is a regular established proportion of stores for this, including lamps, holders, wire, and baskets for keeping the circuits in when completed.

The actual fitting of the circuits depends of course on the class of ship and the individual taste of the officer in command. The main idea in any case is to so divide up the circuits, that in the (unhoped for) event of any particular portion failing, the whole shall be affected as little as possible.

The circuits are usually divided up as follows:—

Top mast, topsail yards, and upper tops—fed from the bridge search-lights.

Lower mast, lower tops, and bridges—fed from the bridge search-lights.

Funnels—fed from the bridge search-lights.

Upper hull circuits—comprising the whole of the outline of the upper works right fore and aft—fed by numerous feeders along the entire length, and taken up to the bridge search-lights.

Water-line circuits, arranged in a similar manner to the above.

If there is any device or Admiral's flag, it should always be taken to a special circuit of its own.

The technical details are fully described in Torpedo Manual Vol. 1. 1901, Pages 220, et. seq. The following two points however require special emphasis.

Firstly :—It is of paramount importance that all circuits should be stopped taut along wire jackstays, which have themselves been hauled bar-taut. Hemp jackstays are no use for this purpose, as the hemp invariably stretches. The water-line circuit presents great difficulty in connection with this matter. The best plan appears to be to rig a jackstay (composed of the wire supplied for towing targets) right fore and aft the ship each side, one end being secured to a bolt in the bows, the other end being set up with a Weston's purchase at the stern. If there is no convenient bolt in the bows, a saddle piece of iron should be made, which can be slid down over the bows, having a lug on each side for the standing part of the jackstay to secure to.

Secondly :—It is absolutely essential that all lamps should be trimmed the same way, and the best method is considered to be with the point of the lamp pointing directly down, the base of the lamp being stopped up closed to the jackstay—by this means alone can perfect alignment be secured.

The curve of the stern also presents some difficulty, and this is best got over, by having a light iron rod made of similar curvature, which can be rigged so as to stand out about two feet clear of the stern, and on which the circuit can be stopped.

The water-line circuit should be stopped at least six feet above the surface of the water.

Circuits should be kept in their baskets when not in use, and *both* ends of each circuit should be most carefully tallied.

Look out all boats are lowered out of the way of lights, or dropped astern.

Furl quarterdeck awning, if spread, and close all deadlights.

Nets.

(1. Out Nets.)

THE Service fittings for this only consist of a working-guy each side forward, which is supposed to be brought to the capstan, with an additional working-guy each side in the waist; the defence being kept forward by means of standing guys set up with luffs. It would be difficult to get the nets out at all by these means; so the following additions are suggested for ships of the "Bulwark" class and earlier vessels, i.e.—those fitted with high lower booms and low net shelves.

In this evolution lower booms must be got out. Two boat ropes or hemp hawsers should be rove from forward, through blocks on the booms, and brought to the *jackstays* of the defence each side; one between No. 3 and 4, and the other between No. 5 and 6 booms—or where convenient. The object of bringing them to the jackstays, is to assist in hauling the nets off the shelf with the first pull.

If fitted with a lower boom aft, a similar boat rope or hawser should be rove, and brought to the jackstay between No. 8 and 9 booms—all these should be well manned inboard.

A small stout monkey boom should be fitted at the bows, and the wire fore-working guy each side led through a block at the end of it, and brought to the fore capstan. The monkey boom is of course got out before any strain is

brought on the wire. In 'bringing to' the wires, the turns must naturally be taken opposite ways for each side, and care exercised that they don't over-ride—a separating chock on the barrel of the capstan will assist this.

In addition, bearing-out spars should be worked on the main deck through the scuttles wherever convenient aft. These bearing-out spars should all have a crutch in the end, and be of good length.

(2. In Nets.)

There are two separate operations in this, viz:—(1) Getting the nets aft. (2) Furling the nets.

Getting the nets aft :—

The after-working-guy each side should be rove as a whip and pendant, the pendant being brought to the boat hoist engine in the battery, from which the main derrick purchase and topping lift have been previously removed. The whip and pendant arrangement is necessary, as the boat hoist engines are as a rule very slow working.—The defence may be assisted aft by the working-guy on No. 4 boom, if necessary manned by hand.

Furling the nets :—

There are two ways of doing this, one employing steam power, the other using hand only. In spite of all that has been said to the contrary, it must be confessed that steam is the quicker as long as everything goes all right; but on the other hand, if the slightest thing fouls, it takes much longer to get it right with steam than with the hand.

In furling by steam, two special 'messengers' should be fitted, consisting of 4½ in. wire with two or more large hooks worked in them. One of these wires should be brought to the fore capstan for furling (say) the port nets, the other to the after capstan for furling the starboard nets. Wire brails fitted with an eye in one end, and led in through rollers in the ship's side, are hooked on to these large hooks when the nets are aft; and on the signal being given when all the eyes are over the hooks, the capstans are hove round, and the nets in the battery rolled up by this means. The nets at each end of the ship are usually pulled up at the same time by hand, as it has been found by experience that the nets along the length of the battery are as much as can be conveniently worked by steam. Each brail for steam furling must be carefully measured, and the position of the large hooks on the messenger exactly arranged, so that when the nets are on the net shelf, the after hook (for starboard), or fore (for port), is close up to the capstan. Very careful measurement is required for the brails—three inches being usually allowed for stretching when fitting new brails. Each brail is fitted with a hauling-up line, so as to gather in the slack as the nets come aft.

The hand brails call for no special remark, except that they must be fitted with hemp-tails, otherwise the men's hands cannot get a grip on them.

Very complete organization is required for the successful performance of net defence evolutions. Care must be taken to fill up all special numbers who may be sick or away in boats on a general evolution morning, especially amongst the 'shelf men,' i.e.—those men who are told off in

each part of the ship to go down on the net shelf and see the brails clear when the nets are coming aft.

N.B.—Directly the nets are on the shelf, don't forget to coil down the brails at once ready for the nets to go out again if required.

And now to add to these remarks from the "Leviathan":—The following methods of securing nets for sea has been found efficient in the "Swiftsure," and at the same time suitable for clearing away quickly:—

'Harbour gaskets' (or securing chains) secured by a slip to the bolt in the ship's side, and in addition to this, by a short tail of 1½ inch rope, spliced into the triangular link on the gasket with a long eye (as for the reef earing of a topsail). This tail is rove through the eye bolt in the ship's side, back through the triangular link half hitched, and the end tucked back.

Between each 'harbour gasket,' a chain 'sea gasket' is fitted with a running eye round the outer rim of the shelf, and the inboard end secured by a rope-tail to the eye bolt in the ship's side, in the same manner as the harbour gasket.

A few additional sea gaskets are recommended for the foremost ends of the nets—say four each side.

The booms should be secured by a chain or wire pendant led from a bolt on the side under the shelf, over the head of the boom, and set up to a bolt on the ship's side above the shelf with a bottle screw and slip—the pin of which must be seized by a yarn.

By using this method, every man when clearing away can do his job simultaneously, instead of waiting for someone else to finish before he starts work; and every part of the net and each boom can be boused taut into place, so that the net is prevented from working, and the resulting strain and chafe of gear is reduced to a minimum.

As oiling nets from time to time is a very necessary evolution—not only for the sake of their preservation, but also for the apperance of the ship's side—and again, as when doing so, some care must be taken to avoid minor accidents; I have asked Commander E. C. Carver to kindly give me his views.

Of course the most advantageous conditions under which to overhaul torpedo defence is when the ship is in dry dock, but generally speaking there is much trouble in gaining permission—in fact I have never known the request acceded to. For the same old yarn is spun; that if it were done, the water of the adjacent basin would be polluted. But I venture to surmise, that the real objection arises from the serious danger that a wayward drop of oil might perchance find a home down the back of the neck of some inquisitive official surreptitiously inspecting a mythical, or trifling, dent in the bottom; caused by either running into 'sunken wreckage,' or an encounter with *that* somnolent whale.—Such being the case, nets must be freshened up at sea, and this is how the "Swiftsure's" commander does it :—

Torpedo nets are ordered to be oiled at least once a quarter, and after heavy weather.—They seldom get it oftener.

Boiled linseed oil should be used; and it is best applied by old hair brooms cut in three pieces, for which purpose these should be saved, and, if supplemented by a few old dust brushes fitted with long handles, there should be sufficient. If not, wads of waste or oakum must be employed :—

The brooms, etc., should be thrown overboard after use, as if stowed away they may ignite spontaneously. About thirty boatswains' chairs, or strops, fitted with hooks are required for men working on the upper, and outer, parts of the nets.

Some forty pots of oil are necessary—roughly eighteen gallons :—

They should never be more than half filled.

The upper deck should be sanded where the men come inboard.

It will be found convenient to employ all officers stationed for getting out nets to trice up their own sections; and a few, say four, to superintend the oiling.

To trice the nets up, use jiggers on all davits and lower booms, etc., that are available; and rig small derricks where necessary—target planks are useful for this purpose. Get hold of the foot of a net, hitch the brails led to the davits or upper deck rails, so that the net cannot fall off the shelf; and work the foot out by using hook-ropes. Trice the foot up so that the bight of the net will hang just clear of the water, then ease down the brails so far as to let the net hang

clear, but not sufficiently down to allow it to fall into the water if any gear carries away.

Where there are no davits, a net should be well hung by a rope's end rove through the meshes, so that there is no chance of drowning a man by the net accidentally falling into the water on top of him.

Do as much oiling as possible from the shelf and booms under it.

Take the opportunity of overhauling and adjusting topping-lifts, jackstays, etc., and working shackles inaccessible when nets are furled; also of scraping and painting the net shelf when necessary.

The boatswain should be continually round the ship in a boat, to see that no 'holidays' are left.

When oiling is finished, hang the nets by strands and unhook the jiggers; and see all brails secured so that nets cannot drop into the water.

Clear lower deck to furl the nets, and when ready 'let fall' into the bight of the brails, by cutting the strands together.

The job can be done by 'both watches for exercise'—less the marines—between 9.30 a.m. and 4.0 p.m.—A fine warm day is a great help.

The booms and docking strake must be painted as soon as the oil which has dripped on to them is dry.

Engine Room, A. B. C.

When I first joined the Navy the subject of steam was neglected and thought of poor account, and in consequence, in this my tenth hour, I have to make the weak admission that my knowledge of the 'brass topsails' is of the crudest description.

Now-a-days—how strange it sounds—the 'Chief' was only sent for when the head wind came along; and after rude Boreas had once more changed his mind, and 'pile driving' was over, there was no more welcome pipe, or gladsome order heard throughout the ship, than—"Watch reeve screw pendants and falls."—and "Away with screw!"

Steam propulsion has now knocked out sail power and reigns afloat.—Electricity is running it close.—Soon our men-of-war will have left the ocean's bosom; and the flying ships of the future will be all that is left to remind us—and in name only—of the flying jibs of the past.

Mate—please solve this nautical conundrum for me. "Can a flying flagship, fly a flying flag?"

Officer of the watch—if you want to be popular in the engine room—keep the cowls and ventilators trimmed, and alter your revolution as seldom as possible; by which I mean give the ship *time to settle.*

In all steaming trials, the engineers should be chary in asking for deck hands—the habit grows apace,—and the officers of the deck equally cautious in granting them.

When not using all the boiler steam for the ship, and there is no immediate likelihood of doing so, the engineer should be told below to get another evaporator underweigh, and with auxiliary condenser make new boiler feed.

Opportunity should be taken of any ease down in speed, to clean fires and lower tubes.

On arrival in harbour, boiler tubes should be swept at once to give the commander a chance, and the funnels, if blistered, should be thoroughly scraped and painted immediately, even if the evolution takes all night.

Recollect when pacing the airy and pleasant bridge, that no man was ever cursed who granted a draught of cool and refreshing lime juice to wet the whistle of the sweating, and always willing, toilers far below; who in all likelihood are trying to break some record, in order that somebody's name (not their's) may appear advertised in the newspapers by the ship's *special* correspondent.

During a full power trial in a fleet, when every yard covered over the ground is important, it is better not to give more than five degrees of helm when keeping the ship on her course; although the conditions of wind and sea may sometimes make this difficult.—At the same time recollect that if carrying out the Rule of the Road at sea, no law can be laid down to govern the spokes of the wheel.

I give here some simple engine room definitions, data, and facts, from the pen of Engineer Lieutenant J. H. Hocken, which need not be despised by those whose knowledge of

steam is perhaps not much better than my own—and may I be forgiven if I have presumed to insinuate such a possibility.

"DEFINITIONS"

"**Work.**"—Work is said to be done when motion is produced against resistance. Unit—one foot-pound.

"**Power.**"—Power is the rate of doing work.
Unit—One foot-pound—second.

As this unit is very small, a unit of one horse power is adopted for convenience of expressing power in considering engines, and this one horse power = 33,000 ft .lbs. of work per minute.

"**Energy.**"—Energy is the capacity of a body for doing work. Work being the product of two qualities, force and length, it can be represented by the area of a plane figure, and by this means we measure the work done in engines from the indicator diagram.

"**Indicated Horse Power.**"—Diagrams of the pressure on the piston are obtained by means of an indicator, and the mean pressure obtained as shown later. Each cylinder is considered separately, and the power calculated from each, the sum of the several powers so obtained gives the total I.H.P.

Let P = Mean effective pressure on piston per sq. inch
„ L = Length of stroke in *feet.*
„ A = Area of piston in *square inches.*
„ Number of revolutions per minute.

Then speed of piston = 2 N.L. per minute (2 strokes per revolution) and total pressure on piston = P.A.

Therefore number of foot lbs. of work done per minute = 2.P.L.A.N.; and since one horse power = 33,000 foot pounds per minute, the I.H.P. = $\frac{2P.L.A.N.}{33,000}$

"To Calculate Mean Pressure."—Divide total length of diagrams into ten equal parts by vertical lines, and then draw vertical lines midway between the first. The first and last ordinates will be $\frac{1}{20}$ of the length of the diagrams from the end, and the remaining ordinates will be at a common distance of $\frac{1}{10}$ of the length from each other.

The lengths of the second set of ordinates obtained, intercepted between the forward and back pressure lines of the diagram, are added together and divided by ten for each of the diagrams, and the mean of the two results obtained, gives the mean effective pressure for the complete double stroke.

"Sensible Heat."—Is the heat added to a body to change its temperature but not its state.

"Latent Heat."—Is the amount of heat required to change a body from a given state to another state without altering its temperature, e.g :—*Water* at boiling point (212°F) into steam (212°F).

"Total Heat of Evaporation." = Sensible + Latent. Latent heat of 1 lb. of steam is found to be given by $L = 966 - \cdot 7\ (T - 212)$

Where T = temperature of evaporation

t = temperature of water before heat is applied, and sensible heat of 1 lb. of steam is S = T – t

where S = sensible heat.

"**Priming.**"—The passage of water with the steam to the engines is called priming.

$$\text{"Efficiency."} = \frac{\text{Useful work done.}}{\text{Energy expended.}}$$

"TO PREPARE FOR SEA."

"**Engine Rooms.**"—See that all lubricating worsteds on main engines and various auxiliary engines are correct, i.e. —of right length and not so thick as to choke the pipe and so provide an insufficient supply of oil; also that there is a small piece of sheet lead attached to the free end to prevent its floating into the lubricating pipe, and that to the other end is attached a piece of twisted wire with ends bent over and long enough to keep the end of the worsted, when pushed into the pipe, below the level of the oil in the box. The bent ends of the wire prevent the worsteds from passing right down the pipe. Fill boxes with oil to about $\frac{1}{2}$ inch below the top of the pipes leading to the bearing.

Test all engine fastenings to ascertain that no nuts are slack. Give engines a revolution with the turning gear and see that lubricating pipes are in position directly over the boxes they feed, also that they do not foul any part of the engines. Take turning gear out of main engines and change over the reversing gear from hand to steam.

See that bilge suctions and mud boxes are clear and that no waste or other matter is in the bilges.

"**Boiler Rooms.**"—In boilers required, see that fire bars are correctly laid, then prime and top the furnaces. This consists in first throwing coal into the furnaces until the bars are completely covered with a thin layer—2 or 3 inches. A small quantity of wood is then placed on this near the furnace door, and on that is put fairly large lumps of coal. The small coal which has fallen through the bars into the ash-pits should be drawn and burnt when fires are spread. Run the boilers down to working height, which is about half a glass or slightly less.

The water is run to the reserve feed tanks by means of a hose which is fixed on to the running down valve.

Take turning gear out of feed pump. Examine fastenings of all auxiliary engines as correct; see that fire-irons necessary for use are provided and stowed ready in the proper racks, and see bilge suctions clear.

"**To Raise Steam.**"—Light fires in necessary boilers and open air cocks on same. Open main stop valves and drains on same if fitted, open bulkhead valves, intermediate and cross-connection valves, and ease regulating valve on main engines. Open all drains on the steam pipes in which steam will be raised, also on separators. Open steam valves to reversing engines and jackets. Open main inlet and discharge valves to main condensers, and start main circulating engines as soon as steam allows.

When the topping of the fires has well burnt through, push it back and spread over the furnaces. Close air cocks when steam commences to blow from them, also close drain cocks; but these should be opened again frequently to keep the pipes clear of water. When steam rises to about 20 lbs., blow through gauge glasses to see if the connections are clear; also lift safety valves with hand lifting gear to ascertain if free, and close again.

Start main feed pump as soon as steam permits. Cylinders and slide chest drains on main engines should be open to bilge until steam blows through, then changed over to condensers as fitted. Run reversing engine frequently as soon as steam permits, so as to move slide valves up and down and so admit steam to both ends of cylinders, and also move engines ahead and astern about one revolution frequently. Adjust steam pressure in cylinder jackets as necessary as steam rises.

With cylindrical boilers, six to eight hours should be allowed. This enables steam to be raised slowly, and no undue strains are put upon the boilers or engines—with water tube boilers from 3 to 4 hours should be allowed.

In this case if only the boilers had to be considered, steam could of course be raised in a very much shorter period without forcing the fires, but ample time should always be given to warm engines slowly and thoroughly before getting underweigh. Warming the engines quickly creates unequal expansion of the parts and is very liable to cause fractures, and if engines are worked before being properly warmed

through, steam is condensed in the cylinders, causing heavy knocking and possible fracture of cylinder.

"**Underweigh**"—"**Stokeholes**"—Keep fires level and bright (with W. T. boilers about four or five inches thick for ordinary N.D. steaming increasing to seven or eight inches with air pressure), and fire up furnaces in rotation. Firing should be frequent, putting about three or four shovels-full on at each time. Water level should be kept constant, and also steam pressure. Where water is used in ash-pits it should be given sparingly, if too much is used a certain amount of heat is lost, and also a deposit of scoria is quickly formed on the tubes. Stokehole plates should be kept swept up as clean as possible. Test density of boilers each watch and pump out bilge.

"**Engine Rooms.**"—Keep a constant look out on all bearing and take instant steps when a bearing begins to work warm ; first by increasing the oil supply to it, and if that fails to prevent the temperature of the bearing from rising, resort to the water service.

If a bearing gets very hot before it is discovered, water should not be put on, or the sudden contraction of the metal might cause a fracture. Oil should be used freely, and if that does not reduce the temperature the engines will have to be eased ; only experience can teach the necessary procedure.

Water should never be applied to a hot piston rod or slide rod, the sudden application of water to one part of the rod would cause contraction at that part, and probably its bending.

Maintain a good vacuum in the condensers (usually from 27″ to 28″), if it is below this, it may be due to the main circulating pump running too slowly, leakage of air pump rod glands, and if the air pump is worked direct from the L.P. piston, leakage of the gland in the bottom of this cylinder; leaky piston rod glands or slide rod glands, leaky joint in L.P. education pipe, faulty air pump valves, faulty vacuum gauge.

Keep feed water at as high a temperature as possible—up to about 125°F.; also watch water level in feed tanks, make up wastage from reserve tanks through the supplementary feed valve into main condenser, and keep a good head of water in the tank and consequently on the feed pump valves. Test water in feed tanks for freshness (it of course should be perfectly fresh), and any signs of salt would indicate a leak in the condensers or in any sea water connection on the feed tank, and should be searched for and located at once.

Log necessary orders and notations in the engine room register.

"**Course of Steam.**"—From boiler through triple expansion engines *and back to boilers as feed water.*

Steam passes out of boiler through internal steam pipe and main stop valve, through main steam pipe, bulk-head valve, intermediate valve, emergency valve (not always fitted) and main regulating valve into H.P. slide chest, through H.P. cylinder into Intermediate receiver, through I.P. cylinder into L.P. receiver, through L.P. cylinder into education pipe and away to main condensers where it is condensed. The water

formed is pumped out by means of the air pump, either through a grease filter into feed tanks, or a hot-well; if the latter, it is pumped through the filter into the feed tanks by means of a hot-well pump. From the feed tank it is pumped by the feed pump into the boilers.

"WATER TUBE BOILERS."

"Common Features."—A boiler consists of a large number of tubes of small diameter with steam and water inside and heat applied outside. Tubes are connected with a common water chamber or chambers below, and a common steam chest above.

Feed water is delivered to the steam chest.

"Advantages over Cylindrical."—(1.) Where weight is limited, the strongest boiler is one of the W. T. kind.

2. It carries considerably less water at working height; and total weight of boiler, power for power, is less.

3. In case of fracture the result is likely to be less disastrous on account of smaller quantity of water carried in boiler.

4. Greater heating surface can be provided in same space of ground, and also greater grate surface—consequently the rate of combustion is less, power for power.

5. Can be easily and quickly repaired as a general rule.

6. Steam can be raised very quickly without injuring the boiler.

"**Advantages of the Turbine Engine over the ordinary Reciprocating Engine.**"—(1.) There are fewer working parts, as no pistons or slide valves, piston rods or slide rods etc, are required.

2. Steam is applied direct to the shaft from the boiler without having to overcome friction of various pistons and bearings.

3. There is less danger of breakdown, and risk of total disablement is also lessened by the fact that usually three separate lines of shafting at least are provided.

4. Weight of machinery for same power is less.

5. Machinery can be kept quite low down in the vessel.

6. Consumption of coal for high speeds is much less.

7. There is practically no vibration.

"**Advantages of Oil fuel over Coal.**"—(1.) Much greater evaporative power: therefore for the same weight of fuel carried the radius of action is greater.

2. Occupies less space, weight for weight.

3. Can be easily stowed and transhipped.

4. No fires to be cleaned, therefore furnaces doors need not be opened, thus excluding rushes of cold air to the tubes, and maintaining the power with regular combustion.

5. Reduction of the stokehole staff.

6. Better control over the expenditure of the fuel. Fires can be put in and out very rapidly.

"**Disadvantages of Oil Fuel over Coal.**"—The supply at present is very limited.

In warships the risk of a loss of fuel in case of injury to the tank containing it is rather great. The risk from the generation of inflammable gases is greater.

"**The Stern Gland.**"—The propeller shafting passes into the ship through what is called the stern tube. The sea water freely enters the stern tube, and to prevent its passing into the ship a gland is fitted at the inboard end of the tube. It is packed with hemp gasket soaked in tallow. The gland studs are fitted with pinion nuts which gear into a rack ring around the shaft, consequently the gland can be moved up equally all round by turning one nut.

"**Evaporator.**"—This is fitted in conjunction with a condenser or distiller, for the purpose of making fresh water either for boiler feed, or drinking water from sea water. It consists of a large closed vessel, usually of cylindrical shape, in which are fitted a series of copper coils with a large steam space above them. On the vessel are a number of fittings—safety valve, vapour valve, feed valve, blow down valve, inlet valve for steam, brine valve, primary and secondary steam gauge cocks, gauge glass mountings, coil drain valve.

Sea water is pumped into the evaporator and maintained at a constant working level, usually about half a glass or a little less, and steam is admitted to the coils and

the drain valve adjusted as necessary. The sea water is therefore evaporated, and passes away through the vapour valve to the conductor or distiller. The brine and blow down valves are used to prevent the water in the evaporator exceeding a certain density.

"**Eccentric.**"—This is an arrangement for changing the rotary motion of the crank shaft into the reciprocating motion required for the slide rod, without using a crank.

A disc called the eccentric sheave has a hole bored in it the size of the shaft, the centre of which hole is distant from the centre of the disc by half the amount required for the travel of the slide valve. This disc is then fitted and keyed to the crank-shaft, enclosed by the eccentric strap, which is attached to the eccentric rod, and so to the slide rod.

In large engines the disc is made in two parts, which are bolted together.

"**Air Blower.**"—In connection with Belleville and Niclausse boilers, air blowing engines are supplied. These engines draw in and compress air and deliver it through nozzles at pressure up to about ten or twelve lbs. per square inch, the pressure used depending on the rate of combustion required.

The nozzles supply air to the space between the fire and the bottom of the generating tubes, and in the Belleville boiler also in the space between the generator and economiser tubes.

The air jets from the nozzles play on the gases of combustion and assist them to mix, which causes a more complete combustion of the gases, and consequently reduces the amount of heat lost.

"Method of Lubricating Crosshead."— Oil box fitted on the crosshead, and pipe from it led to the top brass through which holes are drilled to carry the oil to the rubbing surface. Oilways are cut in the brasses as necessary. The oil box on the crosshead is fed from another box, fixed usually on the side of the cylinder fairly high up, from which a pipe is led which hangs vertically over the box on the crosshead.

"Method of Lubricating Crankhead."— Oil box fitted on crosshead, and pipe led down connecting rod to the top brass, in which holes are drilled to rubbing surface. This box is fed by another fixed on cylinder, from which a pipe leads which hangs vertically over that on the crosshead ; also fitted with a centrifugal lubricator which is secured to crank arm. Oil is supplied to this from a box usually fitted on the engine column, and a pipe which overhangs the lip of the centrifugal.

The oil from the centrifugal lubricator passes through the hollow of the crank pin (the other end of which is blanked), and through a hole in the crank pin at right angles to the axis of the rubbing surface. Oilways are cut in the brasses as necessary.

"Main Bearings"— An oil box is fitted on top of bearings, holes are drilled in main bearing cap and top brass

to bearing surface, and the oil drips from pipes in the oil box into the holes in the bearing. Oilways are cut in the brasses.

Thrust Blocks."— Oil boxes are usually cast in the top of the loose collars, from which holes are drilled to the ahead or astern surfaces, and oilways cut on these. In later designs the thrust shaft and collars run in an oil bath, oilways being cut also on the shaft collars, which carry oil around the rubbing surfaces when the engine is working.

"**Automatic Feed.**"— This is an arrangement by which the boilers can be fed automatically, the water level being maintained practically constant. It consists of a float which is either contained in the steam collector of the boiler, or in a separate vessel, and which is lowered or raised as the water level falls or rises.

The float is connected by a system of levers to the feed valve, and in such a manner that on the water level falling, and consequently the float falling, the valve is opened and more feed supplied, and *vice-versa*, if the water level and float rises, the feed valve closes and lessens the supply.

"**Flaming.**"—Flaming at the funnel indicates that the gases given off from the fuel are combining at the top of the funnel to form combustion. This means a great loss of heat, as under ideal conditions the gases should be thoroughly consumed before reaching the uptake. It is caused by an insufficient quantity of air being supplied above the fuel, or by the fires being too thick.

"**Art in stowing and Trimming a Bunker.**"— A man-of-war's bunkers are as a general rule of peculiar shape

owing to the conditions of construction. Thus we find trunks, gun supports, pipes passing through them, pockets formed by the shape of the deck and bulkheads, etc. On these accounts stowage and trimming of coal is rendered very difficult.

Men should be put into the bunkers as soon as there is sufficient coal to work at without danger of being struck by the coal paid down the shoot. The coal heaps itself under the shoot, sloping off to the bottom of the bunker, and the men should endeavour to keep the coal on the move down the slope and fill the ends, gradually working up as the bunker fills. The spaces behind trunks and pipes must be *seen* filled, also any pockets as the men work up—if this is left too late, the omission cannot be detected or remedied without much waste of time.

Watch the shoot carefully from the deck end to prevent large knobs falling across and blocking the lower end. It is surprising how firmly lumps are sometimes found wedged, and if the shoot is filled above these before the choke is detected, much trouble is often experienced in clearing. Be careful to shout a warning to the men in the bunker on commencing to pay down the coal. Start coaling into the bunker most difficult to trim, and arrange to have only as many shoots open as will keep the decks clear.

Work the petty officers and men in the same bunkers as far as possible on each occasion of coaling. A general list of coaling stations should be put up on the stokers' mess deck before coaling, and the petty officers given a list of the hands working with them.

The petty officers should know the amount of coal in the bunkers they have to work, and how it is distributed, before coaling operations commence.

Hints to Young Shooters.

Addressed to a gunnery lieutenant the day after he leaves Whale Island.

PRIOR to giving Lieutenant Stirling Lecky's chapter to my readers, I trust that these few irresponsible observations of mine may be excused :—

Now that all seamanship above the nettings has disappeared, gunnery is the chief practical subject left to us to take its place ; the acquirements in the two branches differing in but one respect—in so much, that in the old sailing days there was a certain standard (very near perfection), which, with experience combined with natural talents and hard work, it was quite possible for certain gifted individuals to reach ; whereas in the present time, to the skill, learning, and development of gunnery there is finality for no man.

Personally, since that fell day when—cruel fortune—I lost my 'first' in heavy gun drill in the "Excellent"—on account of a temporary lapse of memory, which made me call the vent of a 10 inch M.L. gun the touch hole—and the whole stupid class nearly *bust* themselves with suppressed laughter ; I have always taken the greatest interest in the plain sailing portion of a ship's armament. And many years later I was amply rewarded by being made, I believe, one of

the first 'bob-a-day' gunners in the Service ; one fine day seeing me, a proud man, sallying down to Harwich to take charge of the gunnery fortunes of the good ship "Mersey" ('Misery')—and such a ship she was. For instance, I so well recollect offering her gunner my bob a day and a bob a day besides, if he would straighten up her crooked books, and then keep them—the office stool was never in my line. But he stoutly refused,—perhaps he was wise,—for to square them he couldn't, and to run them he wouldn't.

And here, before Mr. Lecky and I change rounds, let me touch a serious note, to sound a warning to those *to whom the cap may fit.*

When I was a boy, there was an old saying in the Service that :—"Attitude was the art of gunnery, and whiskers made the man." At the present time it is not necessary to endanger the parting of a certain portion of one's garments in order to get a gun to shoot straight ; and I now think that the last part of the adage might very well be changed to "*Manners* make the man."—For alas, I fear that some of us are losing our polish ; and apparently the creed of a portion of naval officers when once they are ashore in mufti—whatever it is afloat—comes very near the preachings of socialism, i.e.—that 'all men are equal.' I put myself on no pedestal ; but in my junior time it used to be our pleasure and delight to salute our *equals* and superiors, as behoved the bearing of one gentleman to another—it being also the Custom of the Service. But in these days, when one meets a young officer ashore, he more than often slouches past with his eyes on the ground, and without recognition ; and it has often struck me that the effort—for effort it is, must be

most uncomfortable. Therefore my lad take my advice.—Away with bad taste ; for of a truth a simple act of courtesy from one man to another, like a shake of the hand—be that fist ever so humble—never hurt anyone.

And now having made myself throughly unpopular, I will 'cease fire' and give the notes which—if you have not already hove "Whispers" out of the port—you will find both very instructive and entertaining.

Naval Gunnery may be divided into the following sections :—

A. Policy :—Which is directed by the Admiralty.

B. Strategical :—Which is the method employed in placing either a fleet or an isolated ship, in an advantageous position as regards sun, wind, rain, bearing, etc., when *outside* gun-range.

C. Tactical :—Which is the method employed in getting the maximum destructive effect out of the weapons themselves, when *inside* gun-range.

D. Mechanical :—Which is drill, adjustment, and upkeep.

E. Training :—Which is accomplished in various ways.

Gunnery Expert.

The word 'expert' suffers considerable misuse. An officer who attains great proficiency in 'D,' is often spoken of as a gunnery expert. It would, however, appear more reasonable to consider that no man is a gunnery expert unless he has a thorough grasp of all sections of the work.

Calibration.

(On board the Ship.)

Calibration takes but a short span in a commission. Too much care cannot be taken with it. If neglected or treated with flippancy, it pursues you with loud shouts till the ship pays off, gibing and jeering and mocking, until you wish you had gone in for Navigation.

A cool vision being necessary, drink barley water the night before, and go to bed early.

Before starting, and during the firing, look over the ship's side occasionally.

A 7·5 in. gun was once fired over a picket-boat's cabin with a full charge.

The picket-boat midshipman took his revenge the following week, by shoving off in the officers' boat sharp to time, leaving the gunnery lieutenant to sleep the night on the pierhead.

Do not forget to calibrate for deflection as well as for the other thing.—Read Domvile's Essay in 'Summary of Progress.'

An inspection of the boat conveying the markers will reveal the fact that the Naval Instructor and midshipmen are in flannels, and that there is an appearance of a picnic. Impress upon them the gravity of the occasion, and instruct your messenger to remove the butterfly nets.

In the middle of calibration, the ship has to be swung. The commander will ask you to predict the hour. Fixing inwardly upon 11.30 say 10.45. He may be late, but if he is ready, it is better that he should abuse you for keeping him waiting, rather than the practice should be delayed—in which case you cannot slang him.

Calibration is useless without previous sight testing—this is sometimes forgotten in the hurry.

As the range is suitable, an opportunity may present itself of getting the trainer's sight correct for convergence.

Ensure the ram home being correct by using one rammer specially marked, for all guns.

Do not hesitate to ask to have the dynamo or refrigerator stopped, if they interfere with the laying. It is quite easy to shift over to the after dynamo if the fore turret is firing, and *vice versa.*

Calibration.

(At the marking station).

The carpenter should make a couple of stakes with rests to bring the rake up to the observer's eye.

A ship was once "marked" with the rake on the ground, and the observer was lying in a pool of water.

The results were bad. The language of the firing ship was also bad. *Quite.*

Regarding not what the boatswain has told you of the excellence of his moorings, get the target bouy in line with a tree, or some other fixed object, and note if the target drifts.

Station at least one midshipman to shout every time the ship fires.

After lunch, station two.

After tea, station three (or as many as necessary).

If calibrating in Bantry Bay, note that there is very good curlew shooting on Sheeland Island.

The twelve bores should be removed at the same time as the butterfly nets.

Warn the observing midshipman that the splash will come before the sound; and in order that the rake observer may be ready, the midshipman should shout loudly directly he sees the flash.

Sight Testing.

Every captain of a gun has three fixed beliefs :—

1. That his sights have not been properly tested :—

2. That his sights have not been properly tested :—

3. That his sights have not been properly tested.

In order to allow for these convictions, make him say 'On' at the telescope, while you say 'On' at the bore. Then change places.

Some men have eyes like fish hooks. Look for yourself therefore, to see that the muzzle cross wires are square.

Explain to the trainer that it is impossible for two sights to converge on one spot at all ranges. He will not believe you.

Always test sights the day before firing. At other times once a month. War comes swift-footed.

When testing sights in harbour, a 56 ft. picket-boat will generally tow a battleship's stern round in the required direction, provided that it is not blowing a gale of wind, or that a spring tide is not making.

To drop a kedge over the stern takes no time, and will keep the ship steady, in case the picket boat has to go for the mails.

Beware of the dockyardmen who makes the final adjustment for parallelism with a piece of folded newspaper under the stop :—

(Now you know why Trincomalee was abolished.)

Have two boards for each gun. Not one. Place them about ten degrees apart. It is much quicker in the end.

Test on the short distance board, and then *immediately* at the long distance. The one board method means an hour between the tests, since sight testing is not 'piecework.' And as it is impossible for you to stand sentry over the gun, you do not know what happens in the meanwhile.

Having tested in the dockyard, take the first opportunity to check the test at 8000 or 9000 yards :—

Do not tell the dockyardmen of your intention so to do.

Have trammels made by which *you yourself personally* can check the distance apart of the marks on the board. Some dockyardmen have a labour saving device of shifting the marks on the board to agree with the sights, instead of shifting the sights to agree with the marks.

In these days of box batteries, it is no uncommon thing, early in the commission, to find mess kettles and other utensils hanging on the sights, the scotchman being used as a seat at an adjacent mess. It is not worth getting angry about. Send for an armourer. Drill a small hole in the floor of the kettle and *put it back* on the sight. Take no further action.

At one bell, when the rum oozes out all over the first lieutenant's deck cloth, the mess will realize the enormity of the sin, and the caterer will see that it does not happen again. This method is more lasting in its effect than 10 A.

Battle Practice and Gunlayers' Test, etc.

In a casemate, sand on deck prevents slipping.

A fan over the breech removes smoke.

An electric light is an aid to accuracy of loading.

Encourage men not firing to watch those more fortunate who are firing.

The band playing in the interval is a splendid thing.

A capsized target at sunset, is better than no hits for want of light.

Sarcastic remarks pave the way to a Court of Enquiry. Tell the man he will do better next year, and ask if his mother was well when he last heard. Humour leads to hits.

Do not try to bluff the Admiralty umpires. You are only firing one ship. They probably saw forty fire before they came to you, and they know most of the tricks.

When the fore turret misfires at Battle Practice, do not call the officer of the turret names through the navyphone, or throw the visual flag at him—which things have been done. Say nothing.

Look scornfully over the edge of the top and think hard.

He will feel it even through the armour.

If his heart is in the right place he will be doing his best.

If that organ is misplaced, it should have been found out sooner, and the unfortunate owner shifted to two cables astern.

If all attempts in that direction have failed, he should have been promoted to the command of the boarding pike party.

So you are to blame in any case.

Warn the Captains's steward by messenger when the after turret is going to fire full charges.

Personally salute, and give the Admiral's steward similar information.

Omission of either of the above is grave neglect of duty.

If you are not fond of mustard plasters, it is as well to let the fleet surgeon know when the fore turret is going to fire over sick bay.

If, when the close season arrives, you have a few rounds surplus, it is not necessary to fire at the horizon to get the account book square. Unknown to you the Admiral may have an experiment up his sleeve, in which case they will come in useful.

Or your relief may be glad of them for the new commission.

Also he will be more inclined to forgive you when you cannot find all the "man and arm boat" stores.

If you have a small deficit, be honest and tell him so.

If the deficit is large, still tell him, and at the same time put in an application for Admiralty leave in order to study the tongue of Chinook.

Mails are irregular in that part of the world.

If you think the ship is going to fire badly, say nothing.

If you think she is going to shoot well, say less than nothing.

If she does shoot badly, and you are asked the reason, why—blame the cordite. Woolwich can stand it.

The most important factor in both Battle Practice and Gunlayers' Test has, by printer's error, been left out of the last drill book.

It is that the men should be thoroughly saturated with a desire to do well.

No amount of mechanical efficiency will make up for the absence of this quality. The score of a hated rival on the notice board, with no remarks for or against, will go far towards producing the desired effect.

At Battle Practice, never mind what the guns are doing.

Watch the target.

At Gunlayers' Test, do not bother about the target. Watch No. 2, lest in his zeal he should open the breech after gun has misfired.

But I forget myself. Your ship will be a good ship. She will have no misfires. Not in the return, anyway.

It does not help matters if the gunlayers go ashore to the canteen the night before firing, and have a jovial evening.

If they do, there is something wrong with the ship.

Pray for paying off.

Some Captains like 'salvoes'—others ' 'independent'.

You of course will much prefer the 'ripple'.

The Captain, however, commands the ship.

When you are a Captain, you will be able to use the 'ripple' to your heart's content.

But do not forget that, by that time, your gunnery lieutenant will be bursting to experiment with the 'bubble' system.

Have your own way.

Armour.

Armour is a weapon of defence. The Navy defends nothing. It attacks.

The only armour used by the early Briton, was a coat of paint called 'woad.'

The Greeks used bronze helmets, and the Romans (not to be out-done) added shoulder guards. This equipment was fortified with flexible cuirasses and chain mail.

The Holy Wars developed armour, and chain mail was superseded by plate armour.

In the Sixteenth Century the warrior built 'n in with plate armour, and his field mobility fell below the requirements of the baron.

For this reason, the Seventeenth Century saw armour turned into an embellishment of the military parade, instead of being used in war.

In the Eighteenth Century, armour made sail for the nearest museum, with stun'-sails both sides.

History is repeating itself at sea, and the next battleship is to have the roof armoured.

That will be the final catastrophe, towards which the present climax is tending. We shall then return to ships coated with the kind of 'woad' possessing the greatest properties of invisibility. As a proof of this tendency, the "Invincibles," which are high speed battleships, are only very lightly armoured.

The carpenter looks after armour. Not the gunner.

It seldom gives any trouble; even the plates themselves know they are on their last legs, and another decade will see them in the museum, alongside hauberk, helm and visor, dusted twice weekly.

Armourers.

An armourer in the days of our forefathers made armour for the warfaring knight. He was an armour-smith.

The process of time has reversed his occupation.

He now does all he can to destroy armour by keeping guns in repair.

He has become a gun-smith.

Do not try to teach the armourer how to use his tools.

He knows all about that business.

See that he uses them for the good of the Service.

Some armourers like to make copper coffee pots for young ladies.

This habit should be checked.

The regulations for armourers shown in a later chapter of miscellaneous information, apply to one ship only, and are open to adaptableness and improvement.

The principle on which they are compiled is best exemplified by the following story.

Time 4.0 p.m.

Armourer :—"This job, sir, is eight hours' work. It will take two days.

G.L. "What a pity! that means *you won't finish till midnight.*"

Armourers have a tendency to fight with instructors and captains of guns.

These men have to be taught to pull on the same rope, and in the same direction.

Small Arms.

Acting Sub Lieutenants always carry their sword by the hilt until they are told of the circumstance.

When small arm companies are on shore, double up all hills. Obstacles then became less noticeable.

If when on shore with the battalion at Portland, the men persist in talking, go up and down the Chesil Beach, once or twice 'charging in line' with bayonets fixed. The talking will cease.

The band should 'stand-easy' some time before, so that when the men have their smoke, the musicans are able to strike up immediately.

The band should play three melodies of three minutes each during a stand-easy of ten minutes.

The average bandmaster desires to play two of two minutes, and to expend the other six minutes in changing the music and recovering breath.

This is wrong. A band is judged by the noise it makes not by the polish on its instruments.

Do not ride unless you know how.

I once saw a commander go clean over the bows of the horse in mounting.

Six hundred men in a quarter column got the stitch from laughing, and the 'march off' was delayed ten minutes while the battalion leader had the blood mopped from his face by a messenger.

He was a torpedo-man.

A man under arms should always have his chinstay down. If it is not down, he knocks his hat off.

Encourage Rifle and Pistol. Discourage pot hunting.

The sailor likes having his belt round the pit of his stomach.

The proper place for it is round the waist.

Extract from the drill book:—

Squad Halt. At the order 'Alt.....bring the "right foot smartly to the ground."

Be careful that the Captain's writing table is not under the "ground."

If he will not move his writing table, shift the right foot to the battery or forecastle.

The next edition is to be more explicit.

The service method of 'slinging arms' drowns a man if he falls overboard.

Lengthen out slings in the usual manner. Reeve the right arm between sling and rifle, and let the sling rest on the shoulder.

In the event of an accident the rifle is lost, but it only costs £3. 16. 9d.

Even a short-service ordinary seaman is worth more than that.

Stand behind a stoker at revolver practice — not alongside him. But if you are insured against accidents stand as you think best.

There are two schools of thought regarding small arm companies. The first says:—"Soldier walking is not for sailors, send the men ashore for exercise."

The second says:—"Precision of movement with the rifle is very necessary — take the boats and practice marching past."

Find out to which the Captain belongs as soon after commissioning as possible, and abide by it.

The man who beats the drum on the march cannot carry it.

Cleaning Guns, etc.

At the beginning of a commission, decide on a strictly uniform method of painting turrets, casemates and guns.

A foot of grey, an inch of black, and the rest white, is hard to beat.

No captain of a gun can then come to you and say, "X. 4 has less to clean than I have."

The number of men required to fight a gun is four times the number required to clean it.

"One in cells, two sick, and three away in the cutter," is therefore to be regarded as a very silly excuse.

The service 'machine, rocket, signal,' might be improved. Fix a twelve-pounder bell-mouthed cylinder round

the top of it. The rest then cleans itself, and the whole, like Kipling's 'Lispeth' is goodly to look upon.

Do not blacklead the projectiles.

An ordnance subaltern once wrote :—"The shell returned from your esteemed ship, appear on inspection, to be covered with a strange foreign substance. We are unable to decide whether it is jam or glue. Both are contrary to the Ordnance Regulations. Please advise."

The correspondence lasted nine months before the seeker after knowledge could be convinced that no harm had been done (by the last commission).

At divisions inspect all guns and casemates.

The gear stowed in upper deck casemates, is even as a thorn in the side of all gunnery lieutenants.

The following division of the agony has proved fairly successful.

A. 1.—Deflection Teacher, and Temperance Meetings.

B. 1.—Ship's Company's piano, and Night School.

X. 1.—Dotter and P.O's. smoking room.

Y. 1.—Knocker out, Voluntary Church, and Quarter deck awning.

Concerning cleaning gear, the following conversation took place between a gunnery lieutenant, married, and a gunnery lieutenant, single.

S.—If you are so poor, how do you manage ?

M.—I allow myself to suppose that the officers of quarters do it.

S.—But do they ?

M.—Oh no. They allow themselves to suppose that *I* do it.

S.—Then where do the men come in?

M.—The men ! Good gracious ! Why they borrow it from the "mess deck and flats", the first lieutenant has a rich father ! !

Nelson's men cleaned guns with powdered ashes from the galley, and oil. Try it, if your outfitter is pressing you.

The cleanliness of magazines and shell rooms is quite as important as that of the guns themselves.

We all know the story of the lady on Southsea Pier, who, attired in a new dress, looked a dream of beauty, until a slant of wind put her skirt aback, before she could brace round.

The gunnery and gymnastic instructors should each be in charge of a group of magazines and shell rooms, for cleanliness

They go there when the hands fall in at 5.45 a.m., and remain till 'clean guns.' But not to sleep.

The P.O. who works in the shell rooms and magazines at general quarters, cannot, unfortunately, be the same man who is in charge of them for cleaning.

Introduce the two men.

Explain to the general quarters P.O. that he is not to dirty the place, or to lean on the paintwork.

Tell the cleaning-quarter man that he is not to disturb the supply arrangements.

Otherwise they will each blame the other, when the sparks fly.

Inspect magazines and shell rooms at quarters and at odd times. The P.O. in charge of the dirtiest is not fond of being sent for to walk round it between 6.30. and 7.30 p.m.

But for your part, it is a healthier way of passing the time than drinking sherry in the smoking room.

General.

Ask the commander for the exact number of men you require for the work. Not twice as many.

The latter scheme only lasts six months—or even less.

The ship then suffers and you look like a fool.

Sometimes weeks and weeks pass without your being able to get any hands for what *you* consider most important work.

Don't be downhearted. Go ashore and play golf.

It cannot go on for ever.

If you fight the senior engineer, it takes half an hour to get pressure on the turrets—or even longer.

Never mind what Whale Island said about the 'rights' of the department—don't do it.

There are only two naval men who have 'rights.'

(a) The trade unionist :—fourteen days cells.

(b) The messman :—prompt cash.

The chief gunner's mate should keep a duplicate of every return that goes out of the ship for reference in case questions arise.

Be very chary about asking that a gunlayer should be disrated. The man who signed his certificate in the gunnery school as being 'quite the best shot I ever saw,' may be either your best friend or your next commander.

Too much deflection teacher, maketh the heart sick.

In addressing midshipmen, some gunner's mates say :—"Class—shoulder arms!" Others say :—"Young gennelmen, present hums!!" "The proper man says :"—Officers shun!!!" Sit on the rest.

Report a midshipman to the commander at once if he takes advantage of his position as an officer, and pulls a gunner's mate's leg during instruction hours.

On your own account give him a 12″ Mark VIII. breech mechanism to draw for his log (in his spare time).

Arrange the gun port chains on the principle of a standing royal lift.

The ports are thus always square, when opened.

Accidents.

Not so long ago there was an accident in a Foreign Navy.

The gun recoiled like a flash of lightning, and sheered all the holding down bolts of the pedestal.

With a great show of ceremony, the casemate door was closed and sealed, so that the Court of Enquiry could inspect it as it stood. The ritual did not, however, prevent an armourer being lowered through the sighting hood after dark to fill the recoil cylinder. The Court, in giving their verdict, remarked that the accident was plainly a "Visitation of God," and as such no one was to blame.

There was a gun accident at Spithead not very far back, and several men were killed.

The gunnery lieutenant in charge is believed to have said, "How provoking! I suppose we had better go back into harbour and *get a new gun*. We can drop these fellows at Haslar on the way."

That, I venture to say, was the correct spirit.

The 'other fellow' would have wept over the wounded and measured the protrusion of the striker.

Conclusion.

It is difficult to go onboard a ship nowadays without finding the quarterdeck or after turret plastered with "England expects that every man will do his duty."

This has always appeared to me like reminding a man of what he has intended to do all along.

When the new-born "Osborne" cadet comes to sea, let us hope he will emblazon abaft the mainmast :—

"ENGAGE THE ENEMY MORE CLOSELY."

Naval Salutes Afloat and Ashore.

His Gracious Majesty or his Viceroys, and all Royal Personages, are respectfully received with a 21 gun salute.

His Majesty in his Indian Dominions is met with a salute of 101 guns.

Admirals of the Fleet, Field Marshals, Ambassadors, Governor Generals, and Lord Warden of the Cinque Ports are entitled to 19 guns.

Lords Commissioners of the Admiralty, Admiral, General, Envoy Extraordinary, Governor or High Commissioner of Colonies, Dependences and Protectorates—17 guns.

Vice Admiral, Lieut. General, Lieut. Governor or Commissioner of a Colony, Minister Resident—15 guns.

Rear Admiral, Major General, Chargé d' Affaires, or subordinate Diplomatic Agent—13 guns.

Commodore, Brigadier General, and Consul-General—11 guns.

Captains Royal Navy, Officers below in command, and Consuls—7 guns.

As a salute to an Officer in command of a merchant ship or convoy—5 guns.

NOTE :—The biggest blackguard in the Service is entitled to a 'one gun salute,' i.e.—The signal fired at 8 a.m. for his Court Martial.

In the presence of a Royal Standard, or the Admiralty flag, no salutes are returned.

A ship saluting a Royal Personage or a Country, breaks the flag at the main; and at the fore for all other personal salutes.

It is not customary to fire an ordinary salute before 8 a.m. or after sunset, but Royal Personages may be saluted at any time.

A salute to a Country or to a foreign Officer, is always returned gun for gun, and if by accident a gun is omitted, the whole salute should be fired over again.

Royal Personages or Presidents of Republics may be saluted in the presence of our own Standard, provided the Standard has been previously saluted.

Salutes on Sundays and during Divine Service on shore, or afloat, are not customary.

When a number of ships are present and a general salute is ordered, vessels commence with the second gun of the directing ship, and directly A. Y. (cease fire) is seen from her, individual ships should at once obey even if they have not finished.

The interval between each discharge is now 5 seconds instead of 10 seconds; consequently the old cadence of—"If

I wasn't a gunner I shouldn't be here!—Fire one!"—has become, as the sailors say, 'absolute' (obsolete).

Bands are often a source of worry (playing an anthem, etc.) after a gun salute; for in spite of all previous instructions, they will constantly strike up at the wrong time (the noise of the guns appears momentarily to unhinge their minds—more especially Maltese), and when once 'they are off' no amount of shouting will ever stop them, as they cannot possibly hear orders owing to the infernal din they are making with their branch pipes; and the only thing to do is to scatter them by heaving the top of the standard compass or something heavy in their midst.

Speaking of these self same Maltese bandsmen, although as a body their days in the Navy are apparently numbered—their duties being gradually absorbed by men from the new School of Music—they will surely be missed; and the Mediterranean Fleet will somehow not feel quite the same without them and their "Traviatas."—The fleets might change, the ships might go, and the crews might come; but Meilak, Dimech, and Tanté Paulo, they scraped on and puffed for ever.

I think one of the greatest characters amongst them—and he was known to many, for did not his wife wash for half the midshipmen of the fleet?—was old Carlo Pace (pronounced Par-che), who use to play the violincello; and although his wife was wont to spoil the linen of the young gentlemen, I can tell a story of how a bluejacket unfortunately and accidentally 'squared yards' with the household of Carlo by practically ruining this great family treasure.

Ne'er a minstrel could conjure with the powers of the cello like Pace—indeed he could almost make it talk; and in consequence he was in high favour with a late, and much regretted Royal Admiral.

One night the band was playing on board the "Alexandra" to a dinner party composed of more than one high and distinguished personage. The hour arrived for the guard and steerage hammocks to be piped below.—The music had to cease; and Pace laid his viol on the deck, while in duty bound he waddled off to get his 'ammick down. In his absence a steerage hammock man came skipping aft with the 'lashed up bed' of a midshipman, who slung alongside the band. The bluejacket was what is known in the Navy as a 'shorty,' i.e.—a man of little stature; and on looking round for a convenient help to his inches, the handy cello at once met his roving eye.—Would that now I could draw a veil; for in less time than it takes to write, the sailor's left flat foot had but too surely done its work,—it was well through the 'middle' of the 'fiddle of Pace.'

Back came poor Carlo.—Paralysed he gazed on the hideous tragedy; then with one half choked '*Santa Maria*,' he lifted his crushed darling in his arms, and heedless of all obstruction, reeled through the fore cabin door into the presence of the Duke and his astonished guests; while blind to respect, and half stunned with emotion, he wailed to all.—"Signor! Signor!—I sooner my father she die Sir!". —No more could he do or say; but grievously weeping, and still hugging 'Humpty Dumpty' to his heaving breast, broken hearted Carlo Pace was gently led away.

If a ship is dressed with masthead flags only, and the occasion is likely to arise for dipping all flags at once to salute some passing Royal Personage; the masthead halliards should all have been previously marked with a piece of bunting at equal drift—if this has been omitted, when the salute is given, it will prove a slummy one.

On the occasion of a funeral passing through a fleet, the 'still' is sounded in each ship as the procession of boats pass. Should the deceased be an officer, a full officer's guard must also be turned up; but if of lower rank, a sergeant's guard only is required :—

In the former case, the 'commodore's salute' should be given in turn by the individual vessels.—Colours of course are kept half masted in the fleet till the 'Last Post' has been sounded by the grave side.

Minute guns for the death of some high Royal Personage, are sometimes fired on the day of the interment; one gun is fired for every year of life, and the signal is given with an interval of 3 minutes between each discharge. The same guns are also fired in a fleet on the death of an Admiral who is actually flying his flag in that fleet, but the number of guns are not to exceed the number of guns to which he was entitled when alive; and in connection with this custom I suppose one of the most impressive memorial services ever held afloat, was that which took place at Tripoli after the sinking of the "Victoria" off the coast of Syria :— Here is the little story.

It happened in the month of June, 1893, and there during the hot summer months, the sun—a molten golden

ball of fire set in a glorious sky—dips evening after evening, in full sight of the anchorage, beneath the western horizon. Anchored in Tripoli's calm roadstead the day following the accident, lay the mourning British fleet, with the minds of all still half stunned with the recollections of the dreadful catastrophe of the yester-day.

That evening as the sun once more prepared to sink to rest, the late Commander-in-Chief's flag was hoisted half-mast high, and at the same time, a never-to-be-forgotten memorial service for those who had gone down, was held on the quarterdeck of every ship present.

Fifteen minutes before the sun was timed to disappear, boomed out the solemn call of the first of the minute guns, and the slowly waving drooping flag was gently lowered a span. Then with every succeeding minute the same was done, till finally, as the sun sank beneath the still and purple sea, and to the dying echoes of the farewell gun, the dead Admiral's flag reached the deck and for ever ceased to fly—and far away across the waters the clear notes of the bugles rang out to the hushed and sorrowing fleet, their last salute to all those gallant officers and men, who with him, at their country's call, had so bravely heard the pipe that summoned them aloft, and :—

> "In the Englishman's grave—the ocean—there
> "lie buried eighty fathoms deep, a British
> "Admiral and four hundred British men, with
> "ten thousand tons of metal as a monument
> "above them! A million of money for a
> "memorial tablet, upon which is inscribed the
> "single word :—VICTORIA,"

Salutes from Boats between Officers.

Rank	When passing	Under Oars	Under sail	Meeting at Landing place	Remarks
Commodore. Captain or Commander.	Admiral	Lay on oars Officer salutes	Let fly sheets Officer salutes	Boat's crew stand up Officer & coxswain salute	
All other Officers.	Ditto	Toss oars Officer salutes	Ditto	Ditto	
Commander.	(Commodore) (or Captain)	Officer salutes	Officer salutes	Boat's crew attention Officer salutes	
Lieutenant and all Junior Officers.	Ditto	Lay on oars Officer salutes Toss oars if pendant flying	Let fly sheets Officer salutes	Ditto	The same marks of respect are to be paid to Military & Foreign Officers
Lieutenant.	Commander	Officer salutes	Ditto		
All Officers junior to Lieutenant.	Ditto	Lay on oars Officer salutes	Let fly sheets Officer salutes	Ditto	
Ditto.	Lieutenant	Officer salutes	Officer salutes	Ditto	

SALUTES on SHORE.

An armed party of seamen in charge of an officer, salutes all officers senior to that officer, whether in the Navy or Army; and Church parties are also included in this procedure.

Unarmed parties in charge of a petty officer salute all officers.—The party is called to attention, and the order "eyes right" or "left" given according to the side on which the officer is passing, at the same time the petty officer salutes with his off hand looking towards the officer to whom he and his party are paying respect.

Men passing their superiors salute with the off hand, but officers *always* with the right—the left hand should be taking care of the sword. I am afraid that this mark of respect amongst officers is often most slovenly performed, the so-called scientific branches being the worst offenders; and it is not edifying to see a young officer who has sunk all his smartness, meeting his superior with either a slight raising of the index finger of whichever hand is not in his pocket, or performing some kind of a circular wave of his forearm, which more resembles a young woman blowing a kiss on Margate sands, than the smart salute due from him to a rank higher than his own.

A seaman without his cap, or when carrying anything that prevents him saluting, will, if standing still, come to attention as an officer passes or if walking, or on a bicycle, he will turn his head smartly towards the officer when passing him.

An officer with drawn sword when making a report, should bear in mind not to get too close to his senior before bringing his sword down to the salute ; for the end of many a highly respectable mahogany nose, which for years has braved the battle and the breeze, has suddenly been endangered thereby—six feet to ten feet is the proper distance to come to the halt.

The sword should remain at the salute whilst the report is being given ; after, come to the 'recover'—and then move off.

NOTE :— A sentry on the official residence of an officer of high rank does not present arms to any passing officers inferior to that rank, although they may be otherwise entitled to it.

When a battalion is marching past ; a very smart and striking method to ensure the companies turning their eyes together at the saluting base, is to make each man fix his eyes on the point of his own right shoulder—this hint was picked up from a native Indian regiment.

At a funeral an officer in charge will salute as follows :—

Present arms :—In two motions, waiting a pause between the two.

Reverse arms :—Recover sword, then drop the point of the sword downwards under the right arm, edge upwards, handle grasped with the right hand with the thumb as high as the mouth.

Trail arms :—Drop the point of the sword and come to the slope.

Reverse arms :—As usual, but by coming to the recover.

Rest on your arms reversed :—Drop the point of the sword between the feet, place the left haud over the right, the chin to lean on the breast.

Attention :—Raise the head and look to the front.

Reverse :—
Rest on your arms reversed :— } As usual.
Attention :—

Present arms :—Reverse and salute in two motions.

NOTE :—I once saw a midshipman stick himself under the chin by bringing his short-bladed dirk up in too much of a hurry.

I am not going to give here the procedure of a funeral on shore, but below are three reminders.

First :—The body is carried feet foremost.

Second :—Always have two men (one each side) to carry the hats of those who are bearing the coffin.

Third :—Have a responsible person detailed to visit the cemetery—especially in a foreign country—and see for himself that the grave is large enough, for I have witnessed more than one scandal occur at the graveside through the omission of this precaution.

Officer of Division.

Quarters ! Quarters ! Quarters every morning ;
That is why the bugle sounds to give the sailors warning.
Fresh and new made drills for quarters every morning—
"Order arms !—Stand at ease !—Thank you, that will do."

PERHAPS by the time these notes are published, the sailor—ruffling it in other feathers—will hardly know himself, but nevertheless I shall let my pen scribble ; and in any case whatever changes for the good (or otherwise) are made, nothing can alter the fact that the officer of division who is smart and well dressed, and who *also possesses the gift of sympathy and tact*, will always have a clean and well behaved set of men behind him of whom he may well be proud, and here I will give one word of advice to the young officer :—

On commissioning, give every man of your division (good, bad, or indifferent), the same fair start. Never find fault with a man twice on the same subject, and don't be too exacting and hard with men with half-kits—recovered deserters, etc. Many of these by a kind word in time will go straight up and never look behind them, and above all don't allow yourself for one moment to be discouraged by the

'incorrigibles' after they have had their chance (the "well sir, I do try 'ard sir," lot); but keep these latter gentlemen separated as much as you can from the others, and with a little rope they will soon hang themselves and 'disappear', much to the relief and satisfaction of the whole division.

Keep the men's hair short, and those that shave should have *clean faces* on Thursdays and Sundays, if not on other days. To be shaved on Sundays is an order in the merchant service which is adhered to. Men are not to grow or shave without permission of the officer of their division, and all coxswains of duty boats, quartermasters and sentries should be shaved every morning.

NOTE :—Some men never know how they admire themselves most, and in consequence are continually playing tricks with their hair. Do not let them alter their mugs more than once in six months, and remember that the 'fore topman's lock' (curled and shining with gun oil of Sunday divisions of years ago) has, with the setting-stop of the fore topmast stun' sail, been cut away. Dirty feet are not allowed.

Do not allow flannels to be cut low in front, and *begin* the commission by *insisting* that everything is uniform, as it will save constant worry in the future.

Keep the bags up to the mark by frequently inspecting the moderate kits, and leave the men with good bags practically alone—the time to pay most attention to dress is at evening quarters with night clothing.

NOTE :—A man in the second class for conduct is liable (by the Service) to have his bag constantly inspected at odd times.

All rates and badges should be sewn on well up above the crease of the elbow, and handkerchiefs should be tied into a bight of at least three inches, and secured with tape (*not white line*).

The depth of crape on an officer's arm denoting mourning should be 2½ inches, and on that of the bluejacket 2 ins.

The size of a seaman's bag is 42 inches high made of two cloths of 24 inch canvas sewn together to a bottom.

All hammocks to have five stops with the middle head-stop double—stops are made of sennit.

Hammock lashings are laid up left-handed, i.e.—against the sun.

A clew has twenty-two knittles.

Clews and lashings used to come from the boatswain; now Mr. Nipcheese has them on his shelves. Ditty boxes are supplied by the carpenter.

The dimensions of a hammock are:—6 ft. long by 3 ft. 8 in. wide, and consist of two breadths of 24 inch hammock canvas sewn together. The bottom of a cot is of the same size as a hammock, with the difference that it is made of ordinary No 6 sail canvas—the sides are two feet high.

NOTE:—When a hammock is being used as a shroud, the last stitch of the sailmaker's needle is neatly popped through the tip of the nose, and then there *can* be no mistake.

Care should always be taken that all men of the 'paper collar brigade' have the proper bedding. In the days of open nettings, 'greyhound hammocks' (to spoil a stow) could always be detected, but nowadays the hammock of a cook's mate who possesses some soft 'caulking spot' may often be overlooked.

A hammock is lashed with seven turns, and all ends of knittles should be tucked in out of sight.

At inspection—men should have their cap ribbons to the front and shewing the ship's name.

Flannels taut across the chest.

Collars pulled down.

Handkerchiefs properly tied.

Knives on lanyard and in the pockets—lanyards under collars and no fancywork.

No belts.

No coloured handkerchiefs tucked into trousers.

Lacing ribbon of trousers tied behind with bow on the top of gussetting.

Boots black and shining.

Clothes brushed.

NOTE :—Many men used to wear a crimping line sewn into the bottom of their serge frocks, and by pulling this taut, and then hauling the bight of the serge over the top of the trousers, they were enable to do away with the long and uncomfortable frock-tail which made the trousers fit so badly,

—but I expect great alterations in dress are contemplated, and such devices will be unnecessary.

On mustering by 'Numbers on the Ship's book'—when a man's name is called, he should walk up and face the Inspecting Officer and *look him in the eyes*; take the hat off in the right hand with the name of the ship to the front, heels together, *stand still*, and repeat number, rating, etc., etc.

Divisions should be closed aft for prayers in loose formation, and at the *run*—I always think that the order to "double" should never be addressed to bluejackets *onboard*, but "break off,—run!"—And in less than no time the ship's company forget how to walk.

"Tolling" the bell never sounds correct for a summons to Church or Prayers; and "ring" the bell is generally I think considered a better order—also ten swings of the clapper should be sufficient.

It should not be necessary for the band to play in order to get the ship's company to prance on and off the quarter-deck—but such is a matter of fancy waistcoats, and far be it that I should lay down the law. While mentioning the band, I think that the playing of the National Anthem as a *matter of routine* at the conclusion of the daily dinner programme is best omitted; and some other air such as "Rule Britannia" or "Hearts of Oak" substituted; otherwise owing to too frequent repetition, the anthem is apt to suffer in the deep respect due to it. Here is an idea to be taken for what it is worth.—In the "Bacchante," on October 21st, the band used to play the "Death of Nelson" after the anthem

on hoisting the colours in the morning. The first year this was done it came as a great surprise. We had the band secretly practised on shore, and when the whistle pipes burst forth into solemn melody, it was only necessary to see by the astonished faces of the men how few at first recognized the air—but next year they looked for it.

Nothing looks so shoddy in a small arm company as unblacked boots, and men with incomplete boot-laces—black spunyarn, &c. Chin-stays should always be *worn down*.

It should be remembered that men detest marching with their blankets (however carried), and great care should be taken that the waist-belt is off the hips and square to the body, as nothing tries a man more than a swagging badly balanced waist-belt.

On a long march, if *halted only for a minute*, men should be allowed to sink on the knee, and the same applies to an occasion of an officer addressing a battalion on parade for the men are then below him, and his voice carries down, and is not shut out from the rear by the front and succeeding ranks—but I am getting off the line.

An officer of division cannot be too careful in seeing that sweepers, yeomen of stores, etc., who do not regularly attend divisions, are nevertheless clean and always in the working rig.

On Sundays, the sweepers, after they have completed clearing up decks, should come up uncleaned and fall in on the left rear of their respective divisions.

Liberty men should not be allowed on shore who have purposely incomplete bags or dirty cap ribbons, or come up unshaved for inspection; It should be impressed on liberty men, that breaking leave to avoid coaling is a very serious offence.

A prisoner in cells is only allowed his blanket on the medical officer's recommendation, and when a man is sentenced to confinement for any period over ten days, his head has to be shorn.

A cell prisoner has to pick 2 lbs. of oakum daily.

The temperature of any cell should not (if it can be avoided) exceed 80 degrees; over that, the door should be opened on the chain.

Cell literature consists of a Bible and Prayer-book.

The size of a cell should not be less than 6½ ft. in length, 3 ft. in breadth, and the full height between decks.

Amount of material to make a serge jumper and trousers ... ... 6 yards

Amount of material to make a duck jumper and trousers ... ... 6 yards.

Amount of material to make a flannel (long) 3 yards.

Amount of material for calico white bag (for hat) 1 yard.

Amount of material to make 2 cap covers ½ yard.

NOTE :—In making a cap, a quarter of a yard of cloth is not wide enough for one cap, but half a yard will suffice for two.

And now, without touching on discipline, I will top this chapter with another word of advice :—It is generally recognized in the Service, and rightly too, that it is a mistake for a superior to swear at a junior, for the latter cannot in discipline reply. Hard words never really do any good, and even in swearing there are two ways of doing it ; but before leaving the subject of Divisions, I feel tempted to relate a little story illustrating a case where no harm was done, and it was amusing enough to impress my young memory though it occured over twenty-five years ago.

It was a Sunday morning at divisions on board a five-master. Our lieutenant was an enormous man distinguished by a fiery head, on which his cocked hat (they wore them in those days) laid half-buried in his long red locks ;--he was also a man of highly choleric temperament.

Curiously enough, we possessed in the same division an Irish bluejacket (with a quite unpronounceable name) who was our officer's living image above the shoulders ; his hair was certainly shorter, but it was, if possible, of a more scarlet hue. This individual at the time of my story was the left hand man of the front rank.

The Captain had started on his usual Sunday inspection, and in due season our time was to come ; but for some reason or other he cut short his rounds, and instead of going on to the top-gallant forecastle he crossed the deck

short round by the foremast, and came straight for the left of our division—the division had not been fully dressed.

The man with the crack-jaw name standing on the left, and *of course* all out of line, saw what was coming before the lieutenant; and when the latter did realize the Skipper's near approach, his frantic order of "division right dress" conveyed nothing to the heedless ears of the left hand man, for 'unpronounceable' was far away with eyes rivetted on the Captain. This was too much for our impulsive officer, out came a sound something between a roar and a shriek, which could have been heard all over the upper deck. —"Hi, you sanguinary *lighthouse* on the left, why don't you look to your right and dress!" It was beyond notice. —The corners of the Skipper's mouth twitched and the whole division *shook*, but no harm was done.

Again, to repeat that although I am no advocate for public swearing, still I often think that with some individuals a few soft timely 'murmurings' to *themselves*, frequently lets off the steam and helps in some extraordinary manner; and as such, I can well recall to my memory a captain of a certain main-topmast crosstrees (in which spot I spent for some time an exciting, and more or less precarious existence) who, whenever matters were *really humming*, invariably invoked the assistance of his *wife's grandmother's cat's tail* with the necessary and suitable adjectives shoved in between. In this instance no one but the poor cat was injured, and she had probably long since departed to a less stormy world; and instead of the ship being adrift, the first lieutenant had

the satisfaction of knowing that the lizard of the main-topgallant mast-rope had been passed by sleight of hand, and that the mastheads of our beloved little corvette were once more clear long before the others of the fleet.

The Officer of the Guard.

No boat flying a pendant, whether it contains a commanding officer or simply the officer of the guard, should ever be away in the daylight hours with boat's crew out of the rig of the day.

The boat that carries the officer of the guard, night or day, always flies ensign and pendant, whether in British waters or otherwise.

Do not as officer of guard, go on board any vessel before she has hauled down the yellow flag and obtained *pratique*.

In all cases of taking mails or bag of parcels on board any vessel for conveyance, remember to receive a receipt in full.

On boarding a merchant vessel, it is always much better, and *very often* prevents incivility, to ask to see the master at once, and get your information from him and not second hand.

When out on duty, instead of arming yourself with a ponderous boarding book, take instead a piece of paper and a pencil, and in any case *never* take the boarding book on to the deck of a foreign man-of-war except in a British port.

On boarding a foreign man-of-war, if possible stick to the King's English, and announce the purport of your visit

somewhat in this manner:—"Captain——of H. M. Ship "Great Harry" presents his compliments to your Captain, and it will give him unbounded pleasure if he can be of any service or assistance to him." In a British port you will be instructed to offer the stranger the "Civilities of the Port."

When returning the call of a foreign officer of the guard, introduce yourself as follows:—"Captain——of "H.M. Ship "Mary Rose" presents his compliments to Captain——of the '*Jacal*,' and begs to thank him for the visit of his officer and kind offers of help."

NOTE:—A lieutenant (not officer of the guard) who is simply *returning the call* of a foreign junior officer (prior to the exchange of visits between the Captains), does *not* fly a pendant—time after time one sees the pendant up, but it is entirely wrong.

All visits of courtesy between commanding officers are exchanged within twenty-four hours of the time that the last ship arrives in port; and on fleets meeting, it is not customary for the commanding officers to interchange their calls till the visits of the Admirals to each other are completed —when a signal to that effect is generally made.

The custom in the British Navy is for the wardroom officers of the ship lying in port to call first on the new arrivals.

Remember when going alongside a ship underweigh, to banish from your mind the gangway. Get your boat's head turned in the direction of the ship's head and *go for*

the boat-rope; and in any scrimmage, never forget to steer your boat.

The above duties of officer of the guard are now most efficiently, for the benefit of the Navy, performed by the Royal Marines, the grant of their welcome assistance to the daily work of the ship being one of the many changes to progress made in latter times; and I am therefore rather afraid that a small bit of satirical humour that I once overheard concerning this branch of the Service and another, would now fall very flat,—but may I be forgiven by both departments, for I feel here tempted to tell the little yarn.

It occurred some years ago in a ship where we midshipmen used to sneak forward to the eyes of the main-deck, to snatch a more or less forbidden smoke after breakfast; and here in this place, the ship's 'snob' (boot-maker) at all times held his court. Undefeated growler was he, but on the morning of which I speak, the commander had *completely* knocked seven bells out of him by giving orders that he was for the future to turn out with the idlers and man the pumps for scrubbing decks. Snob (with rank mutiny) was dreadfully down on the officers, and how little work many of them had to do in the ship in comparison with the men:—"Many of the orficers," said he, "never do an 'and's turn from morning to night, and I arsk you young gentlemen for example; what 'as the passon (west country was our snob) or major of marines to do? Why nothing I tell ye!—But stay a bit," and snobs little eyes were once more twinkling.—"Perhaps the passon may 'ave a bit more to do than the major, and I'll tell ye for why."—He paused.

"Why!"—"Why!"—You silly old snob?"—came from us all—he was not a messmate as might be imagined, but a privileged pal of the snotties. "Well!"—exclaimed the old man. "The passon 'e 'as nothing to do, and no one to 'elp 'im; but the joey major 'as nothing to do, and two people (the subalterns) to pull 'im through."

Poor old snob!—The Navy spins too fast to find room for such as you today; and, like Tom Wagly, you with your fun and your *last* have gone your way.

Court Martial.

SEA officers—unlike our friend Jorrocks who said 'the law was a hass'—as a rule know little about the fine points of judicial procedure, but I believe that it is well recognized that the sailor's training, brings to the seniors broad open minds and much common sense; and I state (fearing not the contradiction) that for fair play and patience, indulgence to the accused with *all* the 'benefit of the doubt,' the refraining from cruelly confusing a nervous witness, to the final acquittal or meting out of justice stern, the British Naval Court Martial stands square above all others.

I am naturally not going to touch even the fringe of the sacred subject of discipline, and the notes below are alone confined to a few simple remarks to refresh a memory, or perhaps clear a point; and generally concern the Officer of the Court.

A Court Martial consists of not less than five, nor more than nine officers; and officers of ships arriving in port after the Court is formed, are not required to attend.

The President of the Court always provides his own Officer of the Court, and it will generally be found a great help to him to have the same lieutenant.

The duties of the Officer of the Court are:—

To receive the report from the master-at-arms that all the witnesses and prisoners are on board, and to take over the list of witnesses both for the *prosecution* and *defence.*

To report to the President of the Court all the Members of the Court and the witnesses on board.

To acquaint himself as to who are the 'stand by' Members, and their seniority.

To assemble the different Members of the Court at the order of the President, and when present at the appointed place, to report to him the "Court assembled."

To see the prisoner, or prisoners, marched in by the master-at-arms.

To usher the Prosecutor into the Court, and then, at the order of the President, to declare the "Court open."

To take care that the onlookers are in the correct place set apart for them.

To call the witnesses as they are required, and to see them in the proper place from which to give evidence.

NOTE:—Before a witness goes into Court, the Officer of the Court should acquaint him as to what to say and do when the oath is administered; and also tell him to give his answers and evidence *to the Judge Advocate* in a clear voice, and not to speak so quickly that there is not time for him—the Advocate—to write down.

No witnessess before their examination or otherwise, are on *any pretence whatever* to converse with other witnesses or outsiders. If there is more than one Court to be held, the Officer of the Court should always have the prisoner and witnesses (for and against) ready for the second trial, and mustered *before* the first Court is dissolved.

Should the Court think it necessary to draw the attention of the Admiralty to the conduct of certain witnesses for unsatisfactory evidence; the minute, so doing, is signed only by the President.

Unless a prisoner (seaman or marine) possesses more than ordinary intelligence, the President should use his utmost endeavours to make him employ some friend-officer to help him; for when they personally defend, they are so apt to incriminate themselves; and out of several cases of the sort that I have seen, I will quote one. The prisoner was being tried for striking a superior. The offence was committed at night, and from the first there appeared to be no case for proof. For five hours the Court sat trying to get to the bottom of the circumstances, when suddenly the prisoner asked his most important witness for defence:—"Where was I, *when* I struck so and so?"—and so convicted himself out of his own mouth. It should of course have been.—"When I was *supposed* to have struck the plaintiff."—The witness here was not allowed to answer the prisoner, and the Court, to its credit, later on acquitted the would be sea-lawyer.

The prisoner's friend is *now* himself permitted to address the Court on behalf of the prisoner.

NOTE:—Before the Court is formed, gather from the President if the different places set aside for the Prosecutor, Officer of the Court, Judge Advocate, etc., meet with his approval. The position for the prisoner is on the Judge Advocate's left. The correct place for the Prosecutor is on the President's right—the chair for the Officer of the Court being on his left; but these arrangements depend solely on the position of the door, and the Officer of the Court should be nearest to it. Again, it is not imperative for the Prosecutor or prisoner's friend to stand up the whole time during a trial; but they must do so when engaged in addressing either the Court or witnesses; and always when the Court is being sworn.

The Midshipman of the Court is the Officer of the Court's A.D.C.,—he answers all bells from outside, and assists the Officer of the Court generally. He should also make it his duty to remind the Officer of the Court on a trial drawing to a close, to order the signal for galleys to be made in plenty of time.

Should it be found necessary to adjourn the Court for the prisoner to write out his defence, the place where he is to prepare that defence (generally the quarterdeck) is to be determined by the President, and the prisoner not having a friend may call on the Judge Advocate to assist him.

In the event of there being more than one prisoner for separate trial, the Jack is dipped after each case is concluded, and a new Court formed.

NOTE:—There is no reason against a Court Martial sitting all night if necessary, but it is usual in a prolonged

case, to adjourn the Court before sunset; and on the occasion of the Jack being rehoisted with the colours the following morning, it is not customary to fire another gun—although there is nothing laid down to the contrary.

On the trial of an officer, his sword is placed across the table with hilt to the right. After the finding, the sword is placed fore and aft the table; should the prisoner be guilty, the point is toward him, if acquitted, toward the President; and when the President hands the officer his sword, it is usual for the Members of the Court to salute the late prisoner.

Grave and solemn as the proceeding of a Court Martial are, yet at times a trial is not without its humorous side, and I wonder if the following little story is out of place, for I so well remember it. I laugh even now at the occurrence, and cannot half do justice to the scene in words.

A Court Martial was being held on board the draughty old "Hibernia" at Malta for the trial of a gunner who had just been discharged from hospital, practically cured, from a long bout of over-affection for 'something short.'

The hearing of evidence on both sides had been taken, the finding decided on, and the Court was cleared to consider the sentence.

On the Court being re-opened, and the prisoner ushered in, hardly had he crossed the threshold of the door, when to the profound astonishment of the Members of the Court, he uttered a wild shriek, threw himself face downwards on the deck, and in piteous tones pleaded for mercy. What was

The fore yardarm in sight · – Mercy! Mercy!

the matter?—Everyone looked at the President to know, and in doing so the reason at once dawned on their perplexed minds. The President in private life nearly always wore a black skull cap; the ship was draughty, and the deliberations for the sentence were long and tedious; so in the prisoner's absence he had covered his head with its longed-for protector, but unfortunately, on the re-entry of the prisoner, shaking with nervousness, he quite forgot to hide it by putting on his cocked hat. The wretched man catching sight of the dreadful cap, and with the 'horrors' still fresh in his mind, thought that Lord Exmouth's days had come again, and that he was about to be immediately hung.

But to resume:—The procedure of a Court Martial is very simple.

1. The warrant is read, and the Members mustered.

2. Prisoner is asked if he objects to any Members of the Court trying his case; if he does, the Court is cleared, and if his reason is valid his objection is allowed and one of the 'stand-by' officers put on; and this done, the same question is asked him, and, if satisfactory, the trial proceeds.

3. The Court is then sworn, all in Court standing up.

4. The charge sheet is read by the Judge Advocate, followed by the circumstantial letter.

5. The question is then put to the prisoner—'guilty' or 'not guilty.' If the former, he is asked if he has any statement to make in mitigation of his offence, or anyone to call on his behalf as to character, etc.; and this over, his

certificates are read (if an officer, a question is also asked as to any previous entry in the log book), and the Court cleared to consider the sentence. If he pleads 'not guilty', the Prosecutor, unless he wishes to enter the witness box himself, calls his first witness.

The Prosecutor is not allowed to address the Court.

NOTE :—It is always as well to have the first witness as the individual who identifies the prisoner, and who has also examined the Ship's Books previous to attending the trial.

6. The prosecution is closed, following which comes the defence (after preparation if necessary), and then the prisoner calls his witnesses.

NOTE :—If the prisoner has no witnesses for the defence, but wishes himself to give evidence on his behalf, he goes into the box, is sworn, and becomes liable to be cross examined by the Court. After this, he prepares and reads his defence; and the prisoner should always be furnished by the Deputy Judge Advocate with a copy of the circumstantial letter and charge sheet, at least twenty-four hours before the trial.

To sum up :—The whole trial resolves itself under two heads.

First.—The charges, which the Prosecutor tries to prove founded.

Second. – The defence, in which the prisoner endeavours to prove the accusations unsubstantiated.

If a prisoner will not 'plead,' it amounts to a plea of 'not guilty,' and the charges have to be proved.

7. On the defence being closed, the Court is then cleared to consider the finding.

8. The Court is opened. If the finding is 'not guilty,' the prisoner is at once acquitted; if guilty, his certificates are read to the Court besides the entries against him in the defaulter's book, and also his conduct sheet. In the case of an officer, his certificates are read before or after the finding (as he wishes), but the Log Book is not examined before the finding.

9. After the certificates are read, the Court is again cleared for the verdict—the decision of the Junior Member of the Court being taken first.

10. On the sentence being determined, the Court is opened, the prisoner and *all* the witnesses are first brought in, then the prosecutor, after which the public are admitted and the sentence read.

The President then orders.—"Remove the prisoner!—The Court's dissolved!—Haul down the Jack!"; or in the case of another trial—"Dip the Jack!"

The Officer of the Court should remember to ask the President some time before the Court rises, if a signal may be made for galleys. The President of the Court is the first Member to leave a ship in which a Court Martial has been held; and it is the duty of the Officer of the Court

to report to other Members that the President is leaving, in order that they may see him over the side.

Commanders attending a Court Martial are entitled to a guard.

There used to be an order that even in the hottest weather white shoes were not allowed to be worn at a Court Martial, but that has been at last rescinded.

The rig of all boats' crews when conveying officers and men to a Court Martial, should be No. 1 or No. 2 ; and they should always wear white hats in fine weather.—When in whites, No.7 rig is worn.

NOTE :—As a novice sitting on your first Court Martial, remember these five things :—

Firstly :—Never take up the valuable time of the Court by asking useless questions not bearing directly on the point.

Secondly:—Avoid asking a witness a 'leading question'.—By which I mean do not put words into his mouth—a witness should tell his own story.

Thirdly:—An 'opinion' from anyone stands for nothing.

Fourthly :—Do not get outside the meaning of 'lawful command,' or 'mitigation.'

Fiftly :—The plea of drunkenness brings no excuse for the crime.

As an example of the uselessness of an 'expression of opinion' being asked for in Court, let me give the following:—It was in a celebrated case which took place many years ago in the Mediterranean. The prisoner was a Post-Captain; and a certain witness also a Captain, was asked this question:—"If you had been Captain so-and-so, would you have done the same?"

Back came the immediate answer to the query:—"If I had been Captain so-and-so, which I am not; and if "Captain so-and-so, had been myself, which he is not—"It is within the bounds of possibility that I might have "done, what Captain so-and-so did not do."

NOTE:—I have lately run across the points below on important Court Martial details, which were drawn out by Fleet Paymaster Alfred Parker—Secretary at the Nore. They are apparently a careful digest of many dry pages from the standard works on Naval Law, and concern the endless rights and wrongs in Court Martial indictments. Being so struck by their extremely clear, concise, and useful nature, I hastily wrote off to their compiler to ask permission to tack them on the end of this chapter.—Here they are, and I pray that in days to come they may clear up the point for many a doubting and harassed brain, besides perchance—who knows?—confound the unholy yapping of some terrier of a 'Naval Port solicitor'.

Nature of Crime:—

Theft.

—Feloniously (dishonestly and with no excuse) taking from owner, of property with intent to deprive him and to

convert to own use, or if he found the property, at once appropriated it, believing that owner could be found.

Robbery.

—Theft, as above, but by violence or putting in fear.

Embezzlement.

—Conversion of property received *on account of* employer but not *from* him, while in prisoners possession, but not merely in his custody.

Wrongful Appropriation.

—Fraudulently converting to own use, property wholly, or partly, or proceeds which came into possession as Trustee, or for custody, or to apply, pay, or deliver wholly, or partly, or proceeds, for, or to, any person, or which were received for, or on account of, another.

NOTE:—In charges of Theft, if none of above, or attempt to thieve be proved, prisoner must be acquitted entirely.

Larceny as "Bailee."

—Must show prisoner should have returned identical articles, coins, etc., received.

Fraudulent Conversion.

—Misappropriation of mess money.

Fraudulent appropriation of any article, money, or the like, by any person not the owner.

Court of Enquiry.

A Court of Enquiry consists of a board of Senior Officers ordered to sit, either by the Admiralty or Commander-in-Chief, for the purpose of investigating and obtaining the clearest information regarding some event that has happened in the fleet—unfortunately, often of a serious nature; such Courts being constantly held prior to an inevitable Court Martial.

The *modus operandi* is extremely clear:—

After the Court is assembled, the individual, or individuals, principally concerned, have the right of being present, or otherwise, during all the proceedings (except at the finding), if they so desire.

Every witness or principal must be cautioned before giving evidence, by Article 699, paragraph 9, of the King's Regulations being read to him.

No person is on his oath; and no one is forced to give any evidence of a nature which, if disclosed, might prejudice his cause in a subsequent Court Martial.

It should, from the first, be the endeavour of the Court to put all witnesses as much as possible at their ease; and each man called, should tell his own little tale in as brief and comprehensive a manner as possible.

NOTE :—It should ever be born in mind by the President of a Court of Enquiry, that the Court does not sit for the purpose of listening to the voice of some garrulous member of the Court wishing to air his personal views and knowledge on such and such a subject; but that they are there to gain information, and quickly too, from witnesses on the matter for which the Court is called and assembled, and for which the Service presses.

In the finding of the Court (which is not made public), members must not omit to attribute blame, or otherwise, to whom it may concern, if ordered to do so.

Courts of Enquiry are, during present times, held much more frequently than in former days—and no doubt they are most necessary; but nowadays, there is such an inquisitive body of would-be rulers of the King's Navee—outside the Service, who meddle with every little untoward trifle that occurs afloat, that it is really difficult for most of us to even blow our noses in public, without the event being shouted abroad.

In these Courts, a clerk who wields the pen of a ready writer is *most* essential.

Committee Work.

EVERY member of a Committee on being appointed to such, should, before the preliminary meeting, carefully tabulate the different headings in the General Subject which he considers should be adjudicated on; then when the first discussion takes place, members can at once compare notes, and will consequently be quickly able to arrange a sequence of all initial points to be settled; which questions can be taken in order day by day, concluded, and what is infinitely more important, finally dispensed with. Otherwise, if a number of enthusiasts gather together to deal with some knotty situation, and none of them appear with a previously arranged programme; they all give free rein to their own ideas at one and the same time, and the condition of the board room is likely to be speedily compared to the proverbial 'jackdaw's nest.'

In all committee work, a book of the minutes should be kept; and on each day of meeting, the subjects and conclusions arrived at during the previous gathering should be read to the members and signed by the President:—

After the first assembling of the committee, and *before each subsequent sitting*; an agenda to form a basis for consideration, should be circulated amongst the representatives—it saves much waste of time.

Small Reminders and Observations on Navigation and Compass.

THE following string of notes are contributed by Commander O. H. Daniel (H.M.S. "Swiftsure"), and the information contained will I am sure prove very useful to many.

When using the mooring board, the object on which bearings and distances are taken, should occupy the centre of the board, as lines of bearing—with distances—radiate from this spot, and the work of plotting is simplified. When sextant is used, the ship's foremast should therefore be placed in centre; but if employing a range-finder—(this most useful instrument has unfortunately left the fore bridge, I hope temporarily only)—the stem may more conveniently be placed in the centre.

No difficulty presents itself in mooring when the direction of line of anchors passes through object on which berth is being taken up. The problem resolves itself into a simple calculation of the distance standard compass will be from foremast when first anchor is let go. Steer a little to windward of the stem, this allowance being judged by eye. The normal position of swivel may be taken as about ten yards *ahead* of ship, owing to the fact that ships cannot moor perfectly taut when using a swivel.—This allowance at all events, is better than none.

If ordered to moor with line of anchors in any other than above direction, the position of ship should be plotted on mooring board as soon and as often as possible. Frequently, and more especially after steaming in one direction for a day or two, the deviation of the compass cannot be depended upon to within $1\frac{1}{2}°$.

At ten cables distance, this error means a displacement of fifty yards, hence the necessity for fixing the ship, and correcting the course to the very latest moment; the closer you are to your position, the less the displacement due to compass error.

Having obtained a good fix at (say) 5 cables from anchorage, your course being S. 61° W., if possible get two objects in line on this bearing, using azimuth mirror or shadow pin. Then *keep them in line.* Should there be a cross tide, the *course* may alter considerably from S. 61° W., and as speed is reduced, the greater will be this alteration.

The first anchor is let go by bearing or distance of foremast, according to which is altering the more rapidly.

NOTE :—Approaching direct for an object, distance alters at its maximum rate, bearing does not alter at all; passing an object abeam, bearing alters at its maximum rate, distance at its minimum. Halfway between these extremes, i.e.—at angle of 45°, it is immaterial which way is used.

If obliged to use shore objects for taking up a berth, select the closest, in order to minimise error of position due to unknown error of compass.

Having headed a ship for a single object on a given bearing, it is not sufficient to keep the ship 'head on'—the *bearing* must be kept on. The bearing will reveal the effect of tide (or wind) which the ship's head will not.

On entering a harbour, and it is necessary to turn the ship several points in order to head for an object, say a foremast on a given bearing (East for instance), select as distant an object as possible on this bearing before putting the helm over—a tuft of cloud, provided it is stationary, will answer the purpose very well. The foremast and the cloud will be in line about East, and the rate with which the foremast sweeps its arc towards the cloud will assist the eye very much in regulation the helm during the turn—much more so than using the compass whose diameter is only ten inches.

When nearly in right direction, select some fixed distant object exactly East, and bring foremast in line with it—it need not be exactly in line.

When mooring in deep water, the cable may run out faster than the ship is going ahead, resulting in a very slack moor. As a check, use a bearing of some object as close as possible for second anchor, and don't let go until the bearing is approximately on. I have known a ship to moor with six shackles on each, and the anchors to be not more than six shackles apart. It need hardly be said she had to re-moor.

Coming to single anchor on a given bearing and distance of a ship, there is no necessity to bring the ship on to the bearing. Steer straight for berth, using mooring board. The former is of course the easier method of the two, but must be acknowledged the inferior one.

Ships nearly always carry weather helm. With stern way on, the stern comes up to the wind. Remember this, and anticipate it with proper helm when engines are stopped or reversed just before anchoring.

To ascertain if a ship is dragging, select objects in line somewhere on the beam. Test them by walking three or four spaces forward or aft. They should be distinctly thrown out of line.

The test for all objects in transit is that a small alteration of position should 'open' them.

To find how far a ship has dragged, stand on a spot A when selecting the two objects. The distance between A and the spot further forward when the objects are in line after dragging, will be the distance the ship has dragged (approximately).

Going up an unknown channel, work one shore only --the nearest. It frequently happens that the only objects to fix with are hills.

Once the position of ship is fixed, a sextant angle to distant hills ahead should be taken—the leg of the station pointer will then tell you the hill. Similarly, any objects ahead should be localised early for use as the ship approaches them.

If doubtful of exact position when approaching an unknown place—say a small cove on a coast where there are no prominent objects, steer for a spot on the coast some

miles away; close the coast, and steer in direction of cove. If you shape course direct for the cove, and cannot pick it up, there is nothing to tell in which direction to go.

Land can be seen most distinctly when the sun is behind it, and low down, e.g.—the eastern shore of Red Sea is made best in early morning, the western in the evening. As the sun gains strength in the morning, far away hills which would have given an excellent indication of the position of ship, disappear entirely.

A light is usually first reported from aloft (a man being sent up for this purpose). When seen from the fore upper bridge, stand on the ladder and step down a couple of paces.—It should dip cleanly. With a good horizon, bobbing the head up and down will frequently cause a light to appear and disappear. This means that the light is on the horizon, and its distance may be estimated by rule given at the end of Light lists.—Combined with a bearing, a very good position is obtained.

The height of tide should be considered in estimating height of light above water, bearing in mind that all heights are given above High Water. Refraction frequently elevates lights,—the real distance may be a couple of miles more than the calculated. I have found this to be the case in the Straits of Malacca.

The reflection of a light is often seen a considerable time before the light itself, but the two cannot be mistaken.

Position by four point bearing is generally credited with more virtue than it really possesses over any other two

bearings. For myself, I prefer taking bearings at time intervals; for instance,— steaming twelve knots, every quarter of an hour, twenty minutes, twenty-five minutes, etc. There must be a reasonable alteration of bearing, and the nearer bearings are to the beam the better.

The distance run in the interval must be the distance over the land, i.e.—the tide must be taken into consideration. The parallel rulers must also be placed on the course of the ship *over the land*, i.e.—on the course as affected by the tide. These are points which may lead to much error by neglecting to observe them, especially with a strong tide and at some distance from the shore. A cross bearing should of course be used in preference to above, provided the two objects give a suitable cut and are not very distant.

The best method of finding the position of the ship at sea, is by the intersection of position lines. Positions are best obtained by twilight stars. A third star will give a third position line and a capital check. There should be no 'cocked hat' if altitudes are correctly taken. The resulting position is of course dependent for its correctness upon the chronometer.

An error of the chronometer will displace the position due East or West. This error should always be very small. The sun may be used for longitude sights up to half an hour of noon when conditions are favourable, that is to say, when its declination is near the latitude.

The best time for longitude is when the heavenly body bears East or West, the impossible case being when the bearing is North or South, and for latitude this is reversed.

NOTE:—By 'best time,' is meant the time when the errors of observation or latitude produce their minimum effect on the result.

As a matter of fact, accuracy at sea, although very desirable, is not imperative. On approaching the land however, the greatest accuracy is necessary, and it is only to be added that, generally speaking, altitudes should be taken of bodies bearing more or less at right angles to the trend of the land. For instance, approaching Ushant from the southward on a N.E. course, select a star bearing S.E. The position line will be N.E. and S.W., and the ship is *on* this line. If the line runs too close to Ushant, sheer off a given distance, and the ship's position will be on a line parallel to the position line, and removed from it by the said distance in a direction the same as the course on which this distance was run.—It is assumed of course that only *one* star is available.

The deep sea lead is very useful in connection with a position line. And here it may be remarked, that a sounding usually tells you where you are *not;* a line of soundings however will frequently tell you with certainty your position, more especially if a shoal bank be encountered. In running lines of soundings, remember that the tubers are not infallible, and that the best guide is more the *general* increase or decrease in comformity with the charted depths, than the coincidence of one or two isolated casts—after being corrected—with one or two on the chart.

Compass.

About the compass and its corrections:—

This is a subject which cannot be dealt with, even superficially, in a few words, but an endeavour will be made here to state as briefly as possible the general laws which govern its action, and the principles on which it is corrected.

Magnets are painted one end red, the other blue. The red end is the North pole, and if the magnet be freely suspended, its red end will point towards the North pole of the earth. The North pole is sometimes called the North-seeking pole, but here it will be referred to simply as the North pole. If the magnet or needle is not painted, the North pole is generally marked, the South pole having no mark.

'Like' poles repel, and 'unlike' attract. Thus the North pole of the compass needle will be repelled by the red end of a magnet, and attracted by the blue end.

The earth is a magnet; and it follows from the fact that as all red ends of magnets, or North poles of magnets, point towards the North pole of the earth, the North pole of the earth itself must be *blue*. The earth therefore has its Northern hemisphere blue, and Southern red. There must be no confusion about this colouring, as the mind has so often to conceive it in reasoning out the simple effects of soft iron in various position.

In speaking of 'Poles' and 'Latitudes,' it must be remembered that the word 'magnetic' is of course understood.

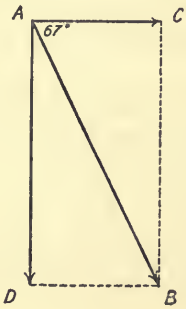
(The magnetic poles are situated at considerable distance from the geographical poles).

A freely suspended magnetised needle when placed anywhere on the surface of the earth, will point *roughly* towards the nearest pole. The angle which the needle makes with the horizon is called the dip of the needle.

The Line of Direction of the needle is known as the 'Line of Total Force.'

In all compass work, the Line of Total Force is split up into its two components, viz :—Horizontal Force, and Vertical Force. Thus :—

In South of England, the Dip is roughly 67°, and supposing the right of this page to be the direction of North pole of the earth, a needle will take up the direction AB, the



angle CAB being the Dip. The Total Force is represented by the line AB, AC represents the Horizontal Force (H.F.), and AD the Vertical Force (V.F.).

Lord Kelvin's compass card is so suspended and balanced, as to remain approximately horizontal in all navigable latitudes, without making any adjustment by means of a sliding weight.

As the compass card is always horizontal, its directive force is proportional to AC instead of AB. The less AC becomes, the less will be the directive force of the compass needle, and the more 'sluggish' will the compass be found.

Take the extreme case. At the North pole the freely suspended needle will point up and down. That is to say the Dip will be 90°, the Total Force (AB) will be wholly Vertical Force, and AC will vanish; there will be no Horizontal Force, and the horizontally kept compass card will point indifferently in any direction—its sluggishness has reached infinity.

At the equator, the needle is affected equally by both poles of the earth, the Dip is Zero, vertical Force nil, and the Total Force is all Horizontal.—AC attains its maximum and the compass works at its best.

It is now understood what roughly happens to a compass *kept horizontal*, and without 'ship attraction,' during a journey from pole to pole via equator.

The magnetic forces on board ship which act upon the compass may be classified under two headings:—

(a) Those due to magnetised hard iron.

(b) Those due to soft iron.

These forces must also be considered with the ship on an even keel, and when she is inclined.—The latter for the study of Heeling Error.

Let us consider the ship first of all as being constructed entirely of hard iron.

Hard iron, is iron which when subjected to violence, such as twisting, hammering, etc., becomes magnetic. (It loses some of its magnetism, and the residue is spoken of as 'sub-permanent.')

The ship built head North becomes a hard iron magnet, fore part red, after part blue. Built head West, the starboard side becomes red, and port side blue. Such, broadly, are the divisions of colouring. Were the ship to be built with head pointed down in direction of Line of Total Force, she would receive a maximum dose of magnetism, the red and blue being divided by her midship section. In whatever direction the ship may be built, it is sufficient to know that she becomes virtually a plain magnet, and the effect of her swinging through the 32 points of the compass, at any given place, produces on the compass needle exactly the same effect as carrying a magnet round the compass. The effect of the magnetism of the hard iron of the ship, could, in fact, be neutralised by placing one single hard iron magnet in such a position in the vicinity of the compass as would be exactly opposite to the line of force of the ship, but in practice this is not feasible, and the magnets are placed in planes at right angles to each other, viz :—in the fore and aft, and athwartship planes.

In speaking of the compass, one must think of the needles, or better of one single needle—very small indeed ; so that all forces are supposed to act equally on both poles, being at equal distances from them.

Consider the fore part of a ship to be blue—in fact suppose the blue pole to be triced up to the jack staff for the time being—Head, North. Blue attracts red end of needle, helps or increases the directive force of needle, and there is no deviation.

On the way round to East, North end of needle is drawn to Eastward, and gradually goes back (deviation still being Easterly) until ship's head is South. Here the blue pole repels the South end of the needle ; no deviation, but diminution of directive force. From South through West, to North, Westerly deviation results.—This is known as 'semi-circular' deviation, from being Easterly in one semi-circle and Westerly in the other. The neutral points are not necessarily North and South, but are usually near the direction in which ships lie when being built. The points of maximum deviation are approximately (within a couple of points) at right angles to this direction.

The force which the ship (a hard-iron magnet) has to overcome in order to produce deviation, is the horizontal force of the earth, which pulls the North end of the needle to the North.

If the H.F. be doubled, it is obvious that for any given direction of the ship's head—or azimuth, as it is called—the deviation will be halved.

Thus, if a ship is in a place where H.F. is 0·7, and and deviation on East is 10° E., on arrival at a place where H.F. is 1·4, the deviation will on East, be only 5° E ; and generally the more the H.F. increases, the less becomes the deviation on any given azimuth. The semi-circular deviation caused by magnetism in hard iron, varies therefore inversely as the earth's H.F. As the H.F. increases from the poles to the equator, it follows that this part of the deviation becomes less as a ship gets nearer to the equator. The magnetism of the hard iron ship does not alter on change of latitude.

To correct this part of the deviation, place ship's head on :—

(a) Either North, or South.

(b) Either East, or West.

Correct (a) or (b) first, according to which has the greater deviation. The deviation being caused by hard iron, must be corrected by hard iron magnets.

Suppose there is 5° Westerly deviation on North, on which point you are correcting. Correcting magnets are always placed at right angles to the needle, i.e.—East and West ; and in this case therefore the athwartship holes in the binnacle would be used for receiving the magnets. (If a magnet were placed North and South it would only increase or decrease the directive force of needle, and not pull it out of its direction).

The North point of the needle has got to be pulled 5° to the right, i.e.—to starboard ; therefore a thwartship magnet must be placed with red end to port. If it is found that

there are already magnets in the binnacle, with blue ends to port, they must of course be *lowered.* It is better to use two or three magnets low down, i.e.—as far away from the needles as possible, than a single magnet which would have to be placed closer. Work the magnets until the error is taken out. If using a distant object whose magnetic bearing is known, say, S 48° W, before correcting, it would be seen to bear S 53° W; the degree 48 would be to the left of the distant object, and the card would have to be turned to the right to bring the 48° on to the object.

The compass is now corrected on North *and* South approximately. Place ship's head on East. Suppose there to be Easterly deviation to correct, or better still, say, on looking at distant object that it bears S. 41° W.—(there is really no necessity to think about Easterly or Westerly deviation).—the degree 48 again has to be brought on to the distant object. It is now to the *right* of it, and the card must be pulled to the *left*—the North end of the needle must go to the left. The red end of the correcting magnet must be on the right side of the needle, i.e.—on its East side, and as the ship's head is East it will occupy a fore and aft hole,—red forward.

The compass is now corrected on East *and* West (approximately). Should there be any remaining deviation on South or West, correct half of it.

We will now consider independently the effect of 'Soft Iron.' Soft iron, is iron which has not been subjected to violence.

It is only magnetic when subjected to magnetic influence.

Its magnetic properties are as follows —

Place the red pole of a magnet near a piece of soft iron, and a blue pole is at once induced next to the red pole of the magnet, the other end of the soft iron having of course red polarity. Remove the magnet, and the soft iron is no longer magnetic. Hold a soft iron rod in direction of line of total force in England, and it receives its maximum induced magnetism, lower end being red and upper blue. This induced magnetism becomes less as the direction of the line of force is left; and in a plane at right angles to this line, or at right angles to the magnetic meridian, the bar is not magnetic.

Soft iron differs, therefore, essentially from hard iron in its magnetic effect, in that its magnetism depends upon the position in which it is held at any one place. There is another essential difference. The induced magnetism in soft iron is naturally proportional to the inducing force. For instance, soft iron which is held vertically will receive magnetism proportional to the vertical force of the Earth. If there is twice as much V.F. in one place as in another, a vertical soft iron rod will be twice as strongly magnetized in the former place as in the latter.

Soft iron, when carried round the compass, produces different effects according to whether it is horizontal or vertical, and horizontal iron produces *opposite* effects when placed (a) all on one side of the compass, and (b) across the compass.—It will be explained what this means later.

The soft iron in a ship may be represented by, and spoken of, as so many soft iron rods held in various positions ; and in speaking of hard and soft iron, it must be understood that no such thing exists in nature as absolutely hard or soft iron. The material of which ships are built partakes of the nature of both these substances ; but by treating each part independently, certain governing principles are found. The application of these principles will free the compass of nearly all error.

Consider the effect of induced magnetism of vertical soft iron in a ship, or in other words hold a soft iron rod vertically in England near a compass with its upper end roughly in the line of the needles—a little above them—and carry it round the compass, keeping it at the same distance.

The Northern hemisphere being blue, the lower end of the rod will receive induced red magnetism, and the upper end (in line with the needles) blue. In carrying the rod round the compass, as it is held vertically all the time, its magnetism will not alter. A blue pole is therefore carried round the compass, and a precisely similar effect is caused as when the blue pole of a hard iron magnet was carried round viz -—semi-circular deviation ; in this case it will be Easterly from North through East to South, and Westerly from South through West to North in the Northern hemisphere, and the opposite in the Southern. As was the case with the hard iron rod, the deviation produced varies *inversely* as the H.F.

Change the latitude, that is to say change the V.F. of the earth. The magnetism of the rod will change *directly* as the V.F.

Deviation therefore, caused by induced magnetism in vertical soft iron, is semi-circular, and varies directly as the V.F. and inversely as H.F. i.e. $\frac{V.F.}{H.F.}$ which is the tangent of the dip. It will be noticed that the neutral points in this case must be North and South, and the points maximum deviation East and West by disturbed compass.

The corrector for this error must be a vertical soft iron rod. This is known as a Flinder's Bar. The bar is made up in pieces and has a total length of 24 in. Corresponding pieces of wood are supplied to fit in the tube on the binnacle when the whole length of bar is not required. The wooden pieces must always be beneath the iron, as the latter should have its upper pole in line with the needles. Poles of magnets are about $\frac{1}{12}$ of their length from the ends—this varies.

Supposing the resultant vertical forces in a ship to produce in South of England a blue pole abaft the compass; this would have to be neutralised by placing a blue pole of suitable length before the compass.

Semi-circular deviation is therefore caused by hard iron and vertical soft iron. This can all be corrected by the hard iron magnets, but the correction would only hold good in the *same latitude.* Whereas no great change would be noticed between England and New York, a vast alteration *might* occur between England and the Cape.

To correct with Flinder's Bar necessitates observations in two latitudes widely apart. A rough correction could be made as follows :—

On the equator there is no V.F., and therefore no induced magnetism in vertical soft iron. Place ship's head on East (or West) at the Equator, the deviation will be caused wholly by the hard iron of the ship, and must be corrected by the hard iron magnets. On arrival at the Cape or in England, or in fact anywhere away from the Equator, again observe the deviation on East. This can only be due to vertical soft iron, and must be corrected by Flinder's Bar. Supposing at the Cape on East, there is Easterly deviation. The Flinder's Bar held vertically at the Cape will have its lower end blue and *upper* end red. If the bar be placed abaft the compass, it will repel the North pole of the needle still more to the Eastward (forward), but if placed before the compass, it will repel the North end of the needle to the Westward (or aft), and correct the deviation. Another rough method :—

At Plymouth on East, deviation = 10° E (or + 10°)

At the Cape „ „ „ = 2° E (or + 2°)

Let H° and V° represent the parts due to hard iron and vertical soft iron respectively at Plymouth.

At Plymouth H° + V° = + 10°.....(a)

As the H.F. at the Cape is the same as at Plymouth, H° will be the same at the Cape as at Plymouth.

The part due to vertical soft iron varies as the tangent of the Dip.

Therefore at the Cape $H^\circ + \frac{-1\cdot7}{2\cdot5} V = +2^\circ$.....(b)

(−1·7 and 2·5 are the tangents of the Dip at Cape and Plymouth).

From (a) and (b) values of H. and V. are about + 5° each, i.e. 5° E.

At Plymouth, therefore, + 5° should be corrected with hard iron magnets on East, and + 5° with Flinder's Bar. The magnet would have to be placed fore and aft—red end forward, and the bar *abaft* the compass, as its upper end would be blue in England. Again, if it were wished to correct at the Cape:—

Let H° and V° represent the parts due to hard iron and vertical soft iron respectively at the Cape.

At the Cape $H^\circ + V^\circ = +2^\circ$

At Plymouth $H^\circ + \frac{2\cdot5}{-1\cdot7} V = +10^\circ$

From which, the values of H. and V. come to (about) + 5° and − 3° respectively.

The 5° E due to hard iron, remains the same at the Cape and Plymouth, because the H.F. at both places is identical.

To correct this 5° Easterly deviation at Plymouth, a fore and aft magnet, red forward, was placed in a certain hole in the binnacle. It would be found that by placing the

same magnet in the same hole at the Cape, 5° of Easterly deviation would be corrected. As the compass has only 2° Easterly deviation to be corrected, the magnet would cause 3° of Westerly to ensue. This is exactly what the above calculation tells us. The North end of the needle is to be swung to the left 5° by the hard iron magnet, and back 3° by the bar, i.e.—altogether a correction of 2° E.

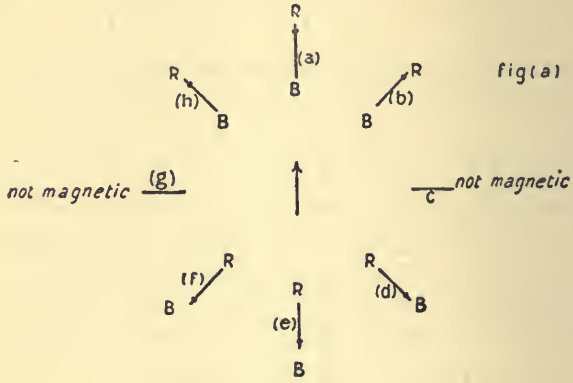
Now at Plymouth, the Flinder's Bar was placed on the after side of compass. It should be exactly the same at the Cape.

At the Cape, the lower end of the Bar is blue and the upper end red. 3° of Westerly deviation have to be corrected, head East. The Flinder's Bar must therefore be placed abaft the compass, as its red pole would repel the North end of the needle to the Eastward or forward. It would be found also that exactly the same length of bar would be required in both cases.

As has been said, these methods are only rough, but they have been mentioned as showing the physical meaning of H.F., V.F., and tangent Dip. The observations taken on East or West at Plymouth and the Cape would be greatly vitiated by the development of temporary—possibly more or less permanent—magnetism during the passage of the ship from one place to the other.

It now remains to see what the effect of induced magnetism in horizontal soft iron is :—

Carry a soft iron rod held horizontal round the compass anywhere in the Northern Hemisphere. As before stated, the needle must be supposed to have practically no length, so that the rod will affect both poles equally. A small figure will save much writing here, and assist the reasoning.



The compass is in the centre and the rod is placed in the eight principal positions.

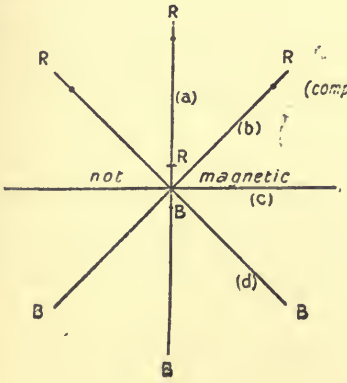
Look at (a) and (e) first. The North end of the rod in both cases is red, although the rod at (e) is in the opposite direction to its position at (a). Note also that the rod attracts the needle in both cases, i.e.—increases its directive force, but causes no deviation. In the case of (a), the blue end of rod attracts North end of needle, in (e) the red end of rod attracts South end of needle. Now look at (c) and (g). The rod is not magnetic, being East and West, or at right angles to magnetic meridian.

At (b) there is Easterly deviation.
„ (d) „ „ Westerly „
„ (f) „ „ Easterly „
„ (h) „ „ Westerly „

This type of rod therefore increases the directive force of needle, and causes what is known as Quadrantal Deviation, from its having its maximum value on the quadrantal points —N.W., S.E., S.W., and N.W., decreasing to zero on the four cardinal points. The deviation it will be observed, follows the signs plus, minus, alternately in the consecutive quadrants.

NOTE :—The above figure will show that a piece of soft iron always attracts the nearest pole of a needle.

Now see what the effect of a horizontal soft iron rod passing *across* the needle is. Another small figure will be useful.



fig(b)
(compass needle in centre)

The rod in position (a) produces no deviation but *decreases* the directive force.

At (c) it is not magnetic.

On the quadrantal points at (b) and (d) the maximum deviation is produced, at (b) Westerly and at (d) Easterly.

In the four opposite directions, the rod will be reversed, but so also will its polarity or magnetism. The result is, that the directive force of the needle is decreased, and a quadrantal deviation produced of an opposite 'sign' to that caused by a rod wholly on one side of the compass.

It is found on board all men-of-war that the quadrantal deviation is Easterly on N.E. ; that is to say, it follow the signs plus, minus, alternately in the four quadrants commencing from N.E. This is due mainly to the horizontal athwartship iron running right across the ship, such as the beams, and to correct this, horizontal soft iron placed athwartships, but *divided* by the compass, must be used. Such are the functions of the spheres placed on metal brackets attached to the binnacles.

To see the effect of the transverse soft iron and the correcting spheres, look at figures (a) and (b). In figure (b) with ship's head North, the transverse iron is represented by rod in position (c)—not magnetic.

In figure (a), the correcting spheres are represented by rods in positions (c) and (g), not magnetic.

On the point N.E., transverse iron is in position (d), figure (b)—result Easterly deviation. The correcting spheres are in positions (d) and (h), figure (a)—result Westerly deviation, and so on. Thus the quadrantal deviation is corrected.

A table is given at end of "Elementary Manual for the Deviations of the Compass in Iron Ships" showing the size of spheres, and the distance at which they must be placed from the compass to correct various amounts of quadrantal deviation.

Quadrantal deviation when corrected, remains corrected in all latitudes, for this reason :--The deviation is caused by the induced magnetism in horizontal soft iron. This magnetism has to overcome the H.F. of the earth to produce deviation. As the H.F. alters, so does the magnetism which it induces in the iron. The needle is therefore always held in a constant direction by the opposing forces. The horizontal force of the spheres also varies as the H.F. of earth, and therefore their correcting influence varies precisely the same as the disturbing influence of the transverse iron. Hence quadrantal deviation remains constant; if zero, it remains zero.

Heeling error is caused by vertical force of subpermanent magnetism, vertical induction in vertical soft iron, and the induced magnetism in horizontal transverse soft iron, as the ship heels to starboard or port.

A ship built in England has her upper part blue and lower red—more or less. On heeling over, the North end of the needle would be drawn to the upper side.

In England too, decks, beams, etc., and vertical soft iron, would have induced blue magnetism on their upper ends, which would also draw the needle to windward.

The result of a ship heeling is usually to draw the North end of the card to the high side. This depends however partly on the position of compass, and partly on the resultant of the various forces brought into play when the ship is no longer on an even keel. The maximum heeling error is found on North and South, and it is corrected by vertical magnets placed in a can under the compass card.

This correction only holds good for one position, as part of the heeling error is caused by *soft* iron, and strictly speaking should have a vertical soft iron corrector. The heeling error of ships is not corrected by placing them on North or South and heeling them, but a 'Heeling Error Instrument' is supplied to each ship, with instructions how to use it. In using it, the ship's head is placed somewhere near East or West, in order that the compass may be free from the effect of a fore and aft soft iron rod, over one end of which the compass might be placed.

The order in which the corrections should be made, is as follows:—

Quadrantal with spheres.
Flinder's Bar—if possible.
Heeling error.
Semicircular with horizontal magnets.

The spheres correct a portion of the heeling error and increase the mean directive force.

In swinging a ship from starboard to port, and from port to starboard, different deviations will be obtained. This is due to a ship not at once assuming the magnetic state properly due to her direction.

After steaming for some time on an Easterly course, the port side of the ship would acquire red magnetism. On hauling to the Northward, an Easterly deviation would probably result, but gradually disappear. A similar temporary deviation must be expected after steaming for any length of time on any one course, and then altering several points.—This especially applies to the Easterly and Westerly courses.

If the card becomes very unsteady during rolling, raise the bowl a little by its chain suspension. If this has no effect, alter position of vertical magnets, noting before doing so, the direction of swing of card with reference to roll of ship to starboard or port, and applying the rule about colours to the vertical magnets.

Don't expect deviations taken in harbour to remain the same at sea—they will not. The vibration of the engines modifies the magnetic state of the ship; although not to a serious extent, after the ship has been in commission for a year or two.

Deviations are frequently incorrect from using the wrong variation. The variation chart should always be consulted.

Diving.

I have never been down in a diver's dress myself, but to gather from some of the extraordinary and forcible remarks that I have sometimes heard issuing from the diver's helmet immediately the glass has been removed, I should surmise that at times a diver's life is not altogether a happy one.

The care of the diver when he is down should be extreme, and the chances of forgetfulness so guarded against as to be impossible—although here is one such case of empty headedness as I *know* occurred. The diving boat was by the gangway of a ship with the diver down. A Captain in his galley, some distance off, appeared to the officer of the watch to be heading for his ship. In his zeal, he (the officer of the watch) screamed to the men in the diving boat to *stop pumping* and haul ahead—picture the diver's face could he have heard !

Precaution for boat and gear.—See that the air pump is in good order, that the pipes are sound, and that there is a plentiful supply of leather washers. That breast ropes and signal lines are good, and the telephones should be tested before going away.

A clear space for the pump should be selected in the boat—if a small boat, before the after thwart, if a large one, in the stern sheets.

The short rope should be of three or four inch hemp, and thirty to forty fathoms long. Pig ballast makes a good mooring sinker, and the sinker should be fitted with a light 'wandering line' to assist and guide the diver in thick water or a muddy bottom.

When working alongside in rough weather, the diving boat should have two or three stout spars, with inboard ends projecting, placed across the boat and securely lashed, to keep her clear of all projections on the ship's side, and to protect the boat from injury—the ends of the spars should be rounded.

Fixed and recognized signals for communication with the diver are given in the book of instruction; i.e.—'More air.'—'Less air.'—'Diver is all right.'—'Coming up,' etc. All other signals are arranged for between the diver and his attendant.

All signals from below are reported to the officer in charge.

If telephone helmets are used, signals are considerably reduced.

Men likely to belong to the crew of the diving boat during a commission, should be at intervals put through a course of diving signals with the divers that they may be called upon to attend; this may be done by placing the diver on the main deck, and the attendant on the upper or boat deck.

In hot weather, drinking water should be taken away in the diving boat for those who want it.

In a head sea, always put the diver's ladder down over the stern of the boat, for it is easier to place the weights on in this position.

A diver should gargle his mouth out with water before ne descends, and place a drop of oil with cotton wool into his ears, as it tends to lessen the noise made by the out rushing air from the helmet.

When a diver is at the bottom, he must be careful not to let his head and helmet get below the level of his hips, for if he does, he will assuredly 'blow up,' i.e.—capsize, and come up to the surface stern first with considerable shock to himself,—he also runs the risk of hæmorrhage from the nose and ears.

The sitting posture is a safety position from blowing up; and to get there, go on the knees first, and then use one hand to settle down with.—Reverse the process when wishing to stand up to come to the surface.

The diver's limit is about twenty-five fathoms, and at that depth his limbs are very nearly in a vice; it is also twilight away down there, except on the very brightest sunshiny days.

It is said that on account of gas bubbles forming in the blood, no diver should make a descent for some considerable time after operating in deep water. For instance, if he has been working for one hour at a depth say of fifteen fathoms,

he should not descend again for three hours; or again, if he has been down for a quarter of an hour at a depth of twenty-five fathoms, it is dangerous to take another dip that day.

The divers of every smart ship should be examined each morning by the doctor as a matter of routine—it is no hardship, and soon becomes a custom.

At night, the diver is supplied with a fifty candle power incandescent light, the lead being well insulated with india-rubber attachment where it passes into the lamp.

To keep the helmet glasses free of all condensation, rub the inside of the glasses lightly with a little clear glycerine.

A diving pump has to be tested daily, and the handiest method of so doing is to have the testing flask secured to a bulkhead, or somewhere close to the usual home of the pump,—then a few feet of piping and a heave round, will do the trick at once.

If a diver gets lost or foul below, he should signal for the assistance of another diver, who would follow his 'wandering line' and bring him back.

When divers are at work endeavouring to stop a hole in a ship, a projectile slung as a monkey and lowered below, has been found useful for driving home the plugs that fix the shot mats, oakum, canvas, fearnought, and all the hundred and one obstructions that may be suggested to fill the rent.

And now I will cease my 'bubbles' on diving, for the thoughts on the last situation make me shiver; and the whole subject has suddenly become too disagreeable for words.

More Diving—Submarines.

A chance thought struck me while running through the previous chapter on diving, that perhaps a wee dissertation on some of the details and attractions in that amphibious calling—Service in a Submarine—might not be misplaced; and a ready help to my wishes will be found in the following jottings from the hand of Lieutenant Bertrand Bannerman of this ship.

The fact that Turkey and ourselves were the last two nations to adopt the B.L. guns afloat, is unfortunately too well known; but happily for the country, in this, the latest branch of science in the fleet, we have not been so conservative. On the contrary, we have been quick to see its merits and advantages as a weapon of defence both for the weak and the strong; and consequently are now exploiting the subject with its many possibilities to the full; while at the present time we have got quite a presentable start on our marine rivals in the manufacture of these particular infernal machines. Sad to relate—as is well known—the price of Admiralty has taken a heavy toll on the lives of willing officers and men; but in spite of shocking catastrophes, the zeal and keenness to excel other nations in our submarine flotilla is even greater than ever.—For is it not one of the eternal verities of the fleet, that the only way to gain true experience in any new departure in the Navy, is through mistakes, and the unavoidable occurrences of untoward events.

On joining the Submarine Service, express no opinion on petrol engines, even though your 'Father has owned a motor car for years.'

You learn more of your duty in two days' running and diving, than you do in two months' blackboard instructions.

Because a man has an engine room rating, it does not follow that he cannot throw a heaving line. The most efficient boat in the depôt was once brought to her berth in a strong tide with only one engine room artificer and a stoker to assist the Captain.

The engine room artificer's trade union spoke to him about it afterwards.—He said, 'D—n the union— the other men said we couldn't do it.

Don't join the Submarine Service in old clothes. Keep them out of sight till you use them.

A Royal Duke once inspected the Submarine Service; "In the Navy," he said, "cleaning ship is a fetish—here it appears to be a disease."

Petrol gas after making a man drunk creates obstinacy. Don't tell him to leave his job. Pull him off it, and sit on him till the conning tower hatch is opened for his relief.

Before diving, all hands plant themselves alongside their job. When the boat is down, they don't move—it upsets trim.

When short circuiting the battery, try and avoid making the connection with a petrol pipe.—It was once done; then we collected the pieces and walked to Haslar cemetery.

When diving, a boat once bumped the bottom. The Captain said "I fancy I hear a loose plate rattling on the roof."

The second in command thought so too. When next in dry dock, they painted out the marks after dark.

The Admiralty allow two mice. They are taken 'on charge' in the ship's books in the usual way. Somehow the family often increase to six.—This is not allowed for in the regulations and the clerks are still thinking what to do.

A boat once fired a torpedo. It was considered lost. For the whole day they searched and then returned to harbour sorrowfully.

Then they found it had never left the tube; and Whale Island whispered—'I thought your Service never had misfires.'

After that we sent them the motto of the Submarine Service, worked in silk on a cloth of gold.

"Guns is dead."

The crew of a boat are as follows:—

Captain.—

Above water—Commands on bridge.
Submerged —Commands in conning tower.

The No. 2.—

A Lieutenant, or Sub-Lieutenant.
Above water—In charge internally.
Submerged —In charge internally.

The Coxswain.—

Above water—Steers on bridge.
Submerged —Steers by compass with vertical rudders.

Four A.B's.—

Above water—Deck hands.
Submerged —Work flooding and blowing valves.

L.T.O. and 2nd L.T.O.—

Run motors and all electrical gear. Fire torpedoes, and have charge of the electric battery.

Two E.R.A's, and one Chief Stoker.—

Work surface petrol engines, air compressors, pumping arrangements, etc.

One Stoker.—

Runs about with an oil can when 'running,' and cleans up the mess when in harbour.

Passengers.—

Stand still and don't ask questions.

Transports.

VARIED as are the duties of the Naval Service, I think that this particular job, i.e.—The conveyance of our brother the soldier—who is always, bless him, in a slow hurry—from one portion of the globe to another, is generally voted by sailors as a tiresome duty; and while he (the soldier) goes out to all the pomp and glory of war, his friend in blue remains behind, and by harder work tries to smother his feelings, and to forget that he too would like to fight. Nevertheless the transport work for the Empire must be done, and done by the Navy *alone*; and not only so, but performed with all the willingness, good temper, and self control gained from our training.

My principal experience of these duties took place at that devoted spot Tilbury docks, during the early months of the South African war; in those black foggy weeks, when England was becoming half stupified from the staggering blows dealt, again and again, by the despised Boer farmers.

Whilst there, although I gained a certain amount of insight into a most complicated, and now happily more or less obsolete, system of joint Naval and Military control for sending Tommy across the seas; I learnt a far greater lesson in human nature from a hundred different points—impressions such that I am never likely to forget.

It is not my place here to write an essay on that dreadful muddle in *every port* of embarkation, which commenced at the beginning of the war, and lasted till Naval practical

common sense was allowed to straighten matters out—but I saw *many* things. As a 'Tilbury echo' of the war, my sympathies will always go out to that unfortunate soldier-man who was made a scapegoat through the machinations of an opulent north-country shipowner (greedy of money as they say up there); who gained his time for a broken contract (a certain ship of his not being ready to date), by the shady expedient of proclaiming some (perhaps?) rather doubtful stores which had already been shipped, as unsatisfactory and unsafe cargo—he well knowing at the time, that it would take at least two days to discharge and replace them. But thank goodness, that in spite of this fur-coated Midas's endeavours to capture the early interests of many influential ladies and men—friends of the officers of a certain smart cavalry regiment—by giving them an enormous luncheon onboard (strictly against the transport regulations) just before the ship sailed; at the conclusion of the war, he utterly failed to procure an ill-gotten baronetcy.

Unfortunately, as time speeds on, such unsavoury recollections as the above are undoubtedly generally forgotten; but for the individuals concerned the results remain unchanged, and in this case,—one man swims the lighter through the spoils of war, the other has sunk—"kicked out."

On a regiment awaiting embarkation, it will be found of great assistance to have a staff of half a dozen men (who have previously 'learnt the transport') to billet the soldiers in their different messes; and if it is a big business on hand, and the start is from home, requisition the services of Marine non. coms.—*they cannot be beaten.*

For sanitary purposes, the troops are always berthed if possible above the horses.

There should be no smoking allowed anywhere in the proximity of hay, and when once the men are berthed, and have got their horses onboard, they should not be allowed out of the ship again.

Never blindfold a horse.

Never turn round and *look* at a refractory horse and endeavour to pull him after you by the head as you walk backwards.—If you want a horse to follow you, put the reins over your shoulder and walk away with him in the direction in which you wish to go, with your *back turned* towards his head.

Unless a horse is incapacitated, he should not be slung; for besides upsetting his internal arrangements and weakening his limbs, he will blister himself badly with the ammonia which is bound to get between his belly and the slings.

A horse should have a stall at least eight feet long and well battened, and in a seaway he will soon find his legs and learn to 'prop'; for at this job he is far quicker than a man who has only two legs against his four. It is better to leave hind shoes on for grip, and in bad weather, when not actually feeding, a horse should be racked up short.

With a lot of horses onboard, there should be at least one blank stall for every eight animals, to give room for doing up the horses in turn.

In fine weather on a long passage, it is of *infinite relief* to a horse to be led out of his stall and walked down the deck, if only for a few minutes,—therefore it should (if possible) be done to all in turn.

Bran and linseed will do more towards keeping troop horses in health, while at sea, than anything else.

The quickest way to ship horses is by walking them up brows.

At Tilbury, when (owing to our reverses) everything for a time was 'rush,' I hired eight American horsemen from the Atlantic cattle trade; and it was extraordinary what confidence the horses seemed to have in them, and how quickly the embarking was done.

In one ship we had four parties,—each party consisting of two horsemen and three carpenters; three brows were going and one hoist. Tommy (much against his will) gave up his horse at the shore end of the brow to the horsemen; away went the horse, and in a jiffy he was railed up in his allotted stall and waiting to be fed. Our record was six hundred and sixty six horses in just under four hours.

In the early stages at Tilbury, we transport officers had much making of 'bricks without straw,' and many irksome matters to contend with; but one of the worst was the constant humouring of the dockmen (stevedores and carpenters), in order to get *any* of the work done at all expeditiously. In themselves, these men were not half so bad as their language, but their 'unions' caused all the

bother. The dockman himself knows no king and acknowledges no authority, and is altogether a very tiresome creature if caught in the wrong mood (which is more than often the case) ; and here I must briefly relate a little story which displayed *real civility* on the part of a polished carpenter of the river side.

We were embarking a cavalry regiment, and things, as usual with the contractors, were behind. I was standing sadly watching a carpenter (not earning, but being paid *five shillings an hour*) leisurely adzing the coaming of a belated horse stall ; when a tall nice looking subaltern with enormously full breeches, and appearing rather lost, strolled up behind my friend 'chips,' and touching him on his bended back innocently queried.—"I say my man can you tell me the way to the officers' saloon?" Chippy took not the slightest notice, he might have been as deaf as the wood that he was spoiling, but *I* was fascinated, I knew something dreadful would probably happen, and so I gazed.

Thinking that somehow he had not heard, the undaunted soldier this time plucked him by the garment, and with a little asperity in his voice, repeated his enquiry ; and *then* the carpenter ceased his labours. He impudently glanced over his shoulder without altering a line of his bent position. Scornfully he looked his interlocutor slowly up and down, and collecting his wits replied:—"Oi say guv'nor, were you *measured* (with much emphasis) for them b——y bags?"—Round went the ugly face again, and more slowly, if possible, the adze resumed its work.

Beauty and the Beast.

The subaltern was a capital boy.—For one moment astonishment and anger flashed across his face, the next he was beating a hasty retreat from such a monster, and chuckling to himself at his own discomfiture. Later on I heard him telling his pals, amidst peals of laughter, the story of that saloon which he could not find.

On a regiment going on foreign service, I plead to the military authorities that all "Good-byes" be said in London; and that neither the ladies of the officers, nor the women of the men, be allowed to come down to the docks and mix up with the regiment amidst all the hurry and scurry of the day of embarkation.

Their presence can do but little good, and under no consideration are ladies ever allowed on board a transport bound to the seat of war.

Concerning this—here is a tale. It is almost too sacred to be printed; but still it may serve as a lesson to both sides, and the remembrance has dwelt in my memory for the last six years.

A heavy cavalry regiment—many of whose officers I knew personally—were to be embarked at Tilbury. The Colonel I had met in the club in London the night before, and knowing the regulations, I got him to promise me that no ladies would come down to the docks.

I suppose he was powerless, for next day the dear things all came to help.—However they were very good, and so far as I heard made no attempts to get onboard. Unfortunately there proved to be one exception; for just as the

last horse was shipped, and the vessel was due to shove off in half an hour, one of my officers came and reported to me that there was a lady in the officers' quarters. Knowing that if this once reached the ears of the others on the jetty, there would be a general rush, I sent my orderly to tell the officer who was with her, that she must go ashore immediately. The message fell on deaf ears. The officer knew me, and somehow thought it would be all right—and finally I had to go myself and sternly order the lady over the side.

She went, but half way down the brow she turned round, and never shall I forget the look of utter abhorrence that she flashed at me from flaming eyes. Five minutes after, the incident, for the time, had left my busy mind, but six months later the remembrance came unwelcomed back, and hit me very hard. News came that my fine young friend the officer had been shot through the heart fighting fiercely in one of South Africa's hottest affairs ; and I also heard at the same time that he was to have married the lady whom I had ordered from the ship, on his safe return from the war. And I!—What had I done?—I had unwittingly destroyed their last farewell on this earth.

"Young lady!—These lines will probably never meet "your eyes, but with your sweet face pardon all you can. It "was but a struggle with duty; and may Time's cure have "helped by now to heal your broken feelings, for you were, I "remember, but a little girl,—*Your* hero died a glorious "death."

Signals.

HALF a dozen words on 'bunting tossing' where confidential matter finds no place :—

Ship's ensigns are supplied in the following sizes, viz :—

In breadths ranging from 20, 16, 14, 12, 10, 8, 6, 4, and so on to a 3 breadth—the smallest.

A 20 breadth ensign measures 10 yards × 5 yards.

A 3 breadth ensign measures $1\frac{1}{2}$ yards × $\frac{3}{4}$ yard.

Royal standards are supplied in the same breadths as ensigns, the 16 and 4 breadths being especially used for Royal yachts.

A 16 breadth ensign, or standard, measures 8 yards × 4 yards.

Union jacks are supplied in sizes according to the size of signal flags carried. One union jack is included in each set of flags.—12 breadth jack for No. 1 size flags, 10 breadth for No. 2 size, 8 breadth for No. 3 size, 4 breadth for Nos. 4 and 5 size, 3 breadth for No. 6 size.

In addition, 10 breadth and 6 breadth jacks are supplied for jack staff; and one 4 breadth for each steamboat of 40 ft. and above. Royal yachts and flagships are supplied with a 12 breadth jack, as well as with the foregoing.

A 3 breadth jack measures $1\frac{1}{2}$ yards × $\frac{3}{4}$ yards.

Court martial jacks are usually 12 breadth.

Ships' pendants range from 14 yards to 3 yards, those above 6 yards in length are made 4 inches at the masthead, remainder $2\frac{1}{2}$ inches at the masthead. The smallest Government vessel flying the white ensign has the right to fly a pendant. The origin of the pendant or whip, as is well known, was the British reply to Van Tromp's broom.

Boats' pendants are made up on board ship to suit the sizes of the boats.

The length of the rope tack of a signal flag used to be the same as the bunting breadth of that flag's tack, but now is of a fixed length of 12 inches.

A breadth of bunting is 9 inches.

The following are the sizes of flags and pendants supplied, according to class of vessel, per list of establishment of stores :—

	Rectangular.	Triangular.	Pendants.
No. 1 Size.	9 × 11 ft.	11 × 5 ft.	$6\frac{3}{4} \times 22 \times 2$ ft.
No. 2 „	$7\frac{1}{2} \times 9$ ft.	$9\frac{1}{2} \times 11$ ft.	$5\frac{3}{4} \times 20 \times 1\frac{1}{2}$ ft.
No. 3 „	$6 \times 7\frac{1}{2}$ ft.	$7\frac{1}{2} \times 9\frac{1}{2}$ ft.	$4\frac{3}{4} \times 15\frac{1}{2} \times 1\frac{1}{4}$ ft.
No. 4 „	$3\frac{3}{4} \times 5$ ft.	$4\frac{7}{12} \times 6\frac{2}{3}$ ft.	$3\frac{1}{6} \times 9\frac{1}{6} \times \frac{5}{6}$ ft.
No. 5 „	$3\frac{1}{2} \times 4$ ft.	$3\frac{11}{12} \times 5$ ft.	$2\frac{1}{4} \times 8 \times \frac{1}{2}$ ft.
No. 6 „	$2 \times 2\frac{1}{2}$ ft.	$2\frac{1}{2} \times 2\frac{3}{4}$ ft.	$1\frac{1}{2} \times 5 \times \frac{1}{3}$ ft.

There are 67 flags in a complete set.

If suddenly ordered to hoist an Admiral's flag and there is not one on board, cut the Church pendant in two and hoist that till you can procure or make a proper one.

When anchored in a fog with a fleet, do not allow night to be made more hideous than necessary, by permitting the signalman to strike the ship's fleet number on top of the 'clanging' ordered by the Board of Trade Regulations—do one or the other.

Many are the aids to memory possessed by the bunting tosser, but I think one of the cleverest to be, that the flag for 'stationing astern,' is remembered by its being marked like the rear half of a wasp.

B. flag is known as 'butter' to prevent phonetic confusion with other letters, and for the same reason :—

'Dough' stands for 'D.'
'Eggs' „ „ 'E.'
'Mutton' „ „ 'M.'
'Nuts' „ „ 'N.'
'Pudding' „ „ 'P.'
'Tommy' „ „ 'T.'
'Vinegar' „ „ 'V.'

An aid to remember the sequence of colours that compose the French ensign; counting from the tack to the fly,—'Bonaparte was right.'

The origin of the striking colours composing the Spanish ensign is supposed to be,—'Gold won through blood.'

I am entering here a rough organization for the signalmen of a first-class cruiser drawn out by Lieutenant 'Sammy' Woods, late of H.M. Ships "Andromeda" and "Bacchante."

I think for many reasons it is generally considered better to have the signalmen organized in four watches. You may certainly have fewer hands on deck, but those few will be working with a good heart, they know it is expected of them by the opposite watch, and you will seldom hear a grumble. If signalmen are put in three watches, and you have the longest watch off up when wanted, you may have more hands, but their minds will be full of:—"How much longer are we to stop here?", and the work will be performed in a half-hearted way; there will be little attention as to whether the hoist is right or wrong, up or down, and the old saying of "one volunteer, etc." will just fit the situation.

Do not try and drive your staff, but lead them. Be firm, and say what you mean, and mean what you say; and above all, if you make a mistake acknowledge it.

When the fleet is manœuvring—unless you are repeating ship, the opposite watch will provide ample signalmen for the bridge—but if you have a few daymen, employ them and the watch on deck only.

If working the fleet from your own ship, keep the next hoist unbent until it is wanted.

Accuracy in signalling is of a far greater importance than rapidity; and when writing down a number on a pad for transmission to the bridge or elsewhere, all figures should be spelt.

It is only occasionally that signals have to be repeated, and the more hands you have on deck idle, the more sky-larking will occur, and always at the moment when you want to hoist.

Signalmen should invariably be detailed off for their respective halliards, and when reading off a hoist which is to be repeated, they should be told *where* the flags are to be run up.

Organization (according to complement).

1st and 2nd Watches composed of:—

1 Ldg. Sig.	—	Ldg. hand.
1 Sig.	—	2nd hand.
1 Sig. or Ord. Sig.—		3rd hand.
1 Ord. Sig. or Boy—		4th hand.

3rd and 4th Watches composed of:—

1 Ldg. Sig.	—	Ldg. hand.
1 Sig.	—	2nd hand.
1 Sig.	—	3rd hand.
1 Ord. Sig. or Boy—		4th hand.

NOTE. ED.:—The wheels that go to successfully run the works of a ship's Wireless Department, are now lubricated by a curious scientific mess.—Ingredients, one half 'torpedo mystery,' one third 'fore bridge bounce,' seasoned with one sixth 'telegraph clerk common sense'—the whole, when well mixed, produces astounding results. For instance, —"Three armoured cruisers left Simon's Bay going full speed

astern," etc., etc. Let me suggest to the torpedo lieutenants of the fleet, that it is never necessary to have the wireless yards a-cock-bill or the aerials themselves hanging in graceful festoons.

Daymen.

Two yeomen and the remainder of the signalmen equally divided, to work watch and watch from 8 a.m. to 8 p.m., or till matters on the bridge are at rest.

One good leading signalman, or signalmen, should be detailed for odd jobs—repairing flags, etc. He should be the biggest fraud on the staff, for he will come in handy when returning flags, etc., to the dockyard.

At sea, there should always be a yeoman with the watch on the bridge.

Running Torpedoes.

1. Ldg. Sig. in each top.

1. Sig. in each top.

Chief yeoman of signals on deck.

Hands by flags.

When running torpedoes, it is as well to have some single flag code between the ship and the boats—such as :—

A. - Torpedo is running away.

C. - Torpedo has turned round.

This saves no end of trouble and scuffling with a boat's signal book, often with cold wet hands.

Signalmen stationed aloft to watch the run of torpedoes, should work in pairs.

Man Overboard.

Leading hand of the watch and all spare hands look out for the man, second hand bend on necessary flags.

At night, the second hand fires the rocket (if it is not fitted electrically), the third hand switches on position lights.

One word about signalmen's leave—the watchkeepers must always arrange with their opposite numbers.

A Little Bit of All Sorts.

To Gare a Ship in a Canal.

Two boats with four extra hands in each will be required, and it is better to have their masts and sails passed inboard ; each boat is provided with the coil and one end of a hemp hawser (size of the hawser depends on the tonnage of the ship) in which is formed a long bowline, the other end of hawser is kept onboard the ship. It is more convenient for both boats to hoist on the side to which you are going to *gare.* One boat is run under the bows and takes in the bow hawser, after which she pulls ahead for the shore and throws the bowline over the securing bollard, the other boat slips under the stern and takes the quarter-hawser ashore.

After securing, the boat which took the quarter-hawser comes onboard, hooks on, and is hoisted up, having previously left four hands (if a big ship) to stand by the bollard and throw the bight of the hawser clear when required ; in the meantime, the boat that took the bow hawser, after securing it on shore, pulls to a spot a good fifty yards ahead of the bollard, and remains there.

Note :—It will be found a saving of time when underweigh in a canal, to keep the garing boats hoisted only sufficiently high to clear the water and mark buoys. With a cross wind in the Suez Canal, extra care must be taken with the hawsers, for it is not impossible for a vessel to get jambed

across, if not actually turned round the wrong way, as happened to us in the "Dolphin" through the obstinacy of a foreign pilot.

On the meeting ship passing.—Hands by the hawsers on board. Slow ahead. Ease off the bow hawser. Let go the quarter-hawser—men after doing so running to the foremost boat. Let go the bow hawser. All shore hands nip into the boat, she sheers alongside to her falls as the ship passes, is hooked on and hoisted up.

Speaking of the Suez Canal, it is a most interesting waterway, especially when it becomes necessary for vessels to pass each other as constantly happens, and I well recollect my first experience of such; firstly, because I believe the incident really did bring a certain amount of thought to the head of a scatter-brained boy, and secondly, as an instance of how a respectable member of the British public *might* have been deceived as to the origin of the Queen's naval officers.

I was struggling home from Suez as best I might, trying to get a little leave before the next foreign cruise, and perhaps to snatch a hunt before the fast fading season flickered out; and I had with luck managed to scramble on board a small 'ditcher' just as she was entering the canal. We had not been steaming more than half an hour before we received the unwelcome signal to *gare*, to allow a more fortunate vessel to pass. However it was not so bad, for as she drew closer she turned out to be one of our magnificent old Indian Troopers—the "Crocodile." When she passed, a seething mass of life towering above us, the band was playing

the "Roast Beef of old England" (it so happened to be the moment of the officers' dinner hour); and whether it was the impression forced upon my mind by the glorious badge and motto—"Heaven's Light our Guide" standing out on her great white bows, or the sight of a host of free-born British officers looking down on 'dirty us,' with the last rays of a setting eastern sun simmering on their varied and brilliant uniforms; or may be, that the strains of that homely air (common to all) of my native country which I hoped so soon to see, had touched a nerve.—Anyhow it mattered not! For as that grand vessel glided past and melted away astern with her precious burden bound for the gorgeous East, I fell into the deepest reverie.

I knew not then—but I well know now, on what I pondered. My mind was awakening to that which comes, sooner or later, to all wanderers who roam the earth, i.e.—The meaning and significance of that grand Imperial term "The Power of the British Empire."—But to turn from the sublime to the ridiculous:—

My lofty thoughts were suddenly brought tumbling down, which if comedy had been absent, would have been almost cruel in its abruptness. I was *made* to realize the present, by hearing the impudent voice of our ditcher's collarless mate exclaiming in my ears in the vilest of cockney:—"D'ye know oi once 'ad the charnce of being fust orficer of one of them craft, but the poy wasn't good enough!"—He meant no wrong, and turned out after to be a very honest little fellow, but it was not *quite* fair. He also told me before I left the ship that he had a peerage in his

family, and he brought me (with hands in the deepest mourning) voluminous papers to prove it, had I been so minded to indulge him further.

But forrard on to :—

Bo'sun's Yarns

The smallest yarn used in rope making is made up of :—

25 thread, next 35, and largest size 45 thread.
25 thread yarns are used in all rope up to $2\frac{1}{2}''$
35 „ „ „ „ $5''$
45 „ „ „ „ $9''$
above which stouter stuff is used.

Rope graduates up from the simple yarn, to 2 thread stuff, 3 and 4 thread stuff, knittle stuff (3 knittle stuff being used for hammock clews), and 6 thread stuff or $\frac{1}{4}''$ rope.

Spun yarn usually consists of 4 thread stuff—it is supplied to ships in pads—each pad weighing about $\frac{1}{2}$ cwt.

In all rope made and supplied from H.M. Dockyards, the Government mark is laid up, viz :—

Portmouth	—	red yarn.
Plymouth	—	blue yarn.
Chatham	—	yellow yarn.
Haulbowline	—	black yarn.

The distinguishing yarns of the Royal Dockyards are made of jute; and a black yarn used also to be supplied to

all sea-going ships to be laid up in all rope made on board, but it was seldom used—these different distinctive marks are known as the 'rogue's yarn.'

The rope-jack carried by ships at sea, will lay up rope up to four strands. Four stranded rope, *if it can be obtained*, is the best for all gear for lower booms, stern and swinging ladders; as the rungs of the ladders have then an equal number of strands on each side of them to keep them square, and the ladders in consequence will last much longer.

Ratlines are put on the shrouds fourteen inches apart with the foremost seizing worked on first, and they are hitched on according to the *sheer of the ship*—hence the term 'sheer pole,'—and not horizontal. Do not make the mistake of ratline down when in dry dock, for when the ship comes out, the rigging has a tendency to slack up; also it is not a good thing to square the ratlines by the tops of the houses near the edge of the dock—this has been done before now.

In putting on ratlines, errors are often caused through the hitches being made upside down, i.e.—with the part leading aft from the clove hitch underneath.

When sparring down, the spars should be cut according to the spread of the rigging, and put on with the foremost ends flush with the foremost swifter; never allow a ratline to be squared, or replaced, without a spar in the rigging for the man who is about the job to stand upon—if there is no spar, his weight is bound to slack those ratlines which are close.

Hawser-laid rope is made up of three or four strands, and is laid up right-handed, or with the sun.

Cable-laid rope is a large rope where each strand is hawser-laid, and the whole is laid up left-handed.

Gunner's rope is three stranded, laid up softer (for pliability) than other rope, and is left-handed.

Hand lead-line is $1\frac{1}{2}$ inch rope—white untarred hemp.

Hand log-line (now seldom used) is made up of white Italian hemp—supplied in lengths of 50 fathoms.

Coir-rope withstands about the same strain as hemp of its own size, but cuts much easier.

Patent log-line is supplied in lengths of 40 fathoms.

NOTE:—In the old days before the advent of the sand glass, the speed of the ship was often determined by the 'Dutchman's Log,' and the method was certainly crude. It consisted of dropping from the knightheads some small floating object such as a chip of wood, and by taking the time by watch that it took to float aft to the taffrail, and also knowing the length of your ship, you could calculate her movement through the water at that particular time.

Signal halliards are made of the same stuff as hand lead-lines, but they are laid up slacker for flexibility's sake—they are also of the same size as the lead-lines.

Length of a coil of hawser-laid rope 113 fathoms.

" " " cable " " 130 "

In rope-making, the conical scored piece of wood used for laying up strands is called a 'top,' and the swivel hook to which the ends of the strands are secured a 'lob,' the wooden instrument used for making sword-matting is known as a 'slice.'

The different kinds of mallets used for refitting are :—

The heaving mallet—for hemp splicing.

The serving mallet (with scored head)—for hemp service.

The brass headed mallet—for splicing wire rope, hawsers, etc.

The 'serving board' is a small wooden arrangement for neat service, and is made in the ship.

NOTE :—I enter these small details in cordage and refitting, because the smell of the tar bucket has not wholly disappeared from the sailor's ken ; and also that, in spite of change, it is still found necessary to carry *some* rope. The neat tier is very nearly a vision of the past.—The boatswain *sees*, but alas, he does not understand.

Steel-wire hawsers are of all sizes varying from the $1\frac{1}{4}$ inch to the 8 inch, but those generally supplied to sea-going ships are :—

6 inch :—6 stranded, 30 wires in each strand, length 150 fathoms.

5 inch :—6 stranded, 24 wires in each strand, length 150 fathoms.

$3\frac{1}{2}$ inch :—6 stranded, 12 wires in each strand, length varying from 120 to 360 fathoms.

All destroyers are supplied with the $1\frac{1}{4}$ inch, and the $2\frac{1}{2}$ inch is about to be granted to all vessels of over their tonnage.

Ship's towing pendants are as a rule $6\frac{1}{2}$ inch in size, although $8\frac{1}{2}$ inch wires are sometimes supplied.

Bullivant's patent nippers are the ones generally fitted to ships for wire hawser work, and the slipping strain I believe averages about 10 tons, but it depends on the size of the nipper and chain.

Eye splices in wire hawsers are always formed by a tapering splice, i.e. :—Tuck the strands twice, then halve each strand and tuck again, third the strands and tuck a third time, then trim the ends off neatly and serve the whole splice over.

An 'artificial eye,' is an eye worked in the end of a wire or rope ; it is not so strong as an eye splice, but it can be formed more expeditiously.—When splicing wire the strand is known as a 'ready.'

Breaking strain of a	6	inch	wire	hawser	—	88 tons.
,, ,, ,,	5	inch	,,	,,	—	64 tons.
,, ,, ,,	$3\frac{1}{2}$	inch	,,	,,	—	21 tons.

A good composition for preserving wire hawsers is a mixture of tallow, linseed oil, and resin, made up to about the density of vaseline—this mixture will not drip, nor deface the deck underneath the reel.

Breaking strain of a 9 inch hemp hawser — 16 tons.
" " " 6 " " " — 9 tons.
" " " 4 " " " — 4 tons.

The rough method to find the breaking, proof, and working strain of a rope, is to square the size of the rope, and divide the result consecutively by 3, 4, and 6, for instance :—3 inch rope.

Breaking Strain.	*Proof Strain.*	*Working Strain.*
$\frac{(3)^2}{3} = 3$ tons.	$\frac{(3)^2}{4} = 2{\cdot}2$ tons.	$\frac{(3)^2}{6} = 1{\cdot}5$ tons.

The calculation generally used to find the weight of any number of fathoms of rope, is to square the size of the rope, then multiply by the number of fathoms and divide ; in the case of hawser-laid rope by 4·24, and in cable-laid by 4·97, for instance :—80 fathom of 9 inch hawser-laid—

$$\frac{(9)^2 \times 80}{4{\cdot}24} = 1528{\cdot}2 \text{ lbs} = \text{weight of coil.}$$

A block is measured from the head to the seat along the score.

A clump block takes a rope half the block's measurement ; and an ordinary block, a rope one third of the measurement.

The size of a hemp block strop in comparison with the size of the rope it takes should be, that the strop is half an inch longer than the rope, viz :—9 inch block is stropped with a $3\frac{1}{2}$ inch strop.

Wire strops are now nearly always used, and they are much neater and smaller than hemp—they should be heavily greased before being parcelled and served over.

To measure for the size of a block strop—once round the block, once round the rope, and once round the thimble.

A stopper is put on to right-handed rope, by taking the end round *with the left hand.*

A rope is always coiled down on the bight. Cheesing and flemishing down ropes is a matter of taste and neatness for Sundays, etc.,—it is a mistake to employ the former at *any time* with boat's falls.

Speaking of Sundays.—When the time of the year comes along which admits of Divine Service being held on the upper deck, it's not a bad plan to have the awning curtains stopped up and furled to the ridge rope when the awning is re-spread in the morning watch—it also saves time.

Again, when at Sunday Divisions and the band plays aft, let the divisions change rounds as to where they fall in on the upper deck Sunday by Sunday—then all hands get a pleasing dose of the big drum.

The pulling boats generally supplied to H. M. Ships for sea service consist of the following :—

Launches ranging in length from	42	feet	to	38	feet.	
Pinnaces	„	„		38	„	34 „
Barges	„	„		34	„	32 „

Cutter	„	„	32	feet to 25	feet.
Jolly-boats	„	„	24	„ 16	„
Dinghies	„	„	14	„ 10	„
Galleys and gigs		„	32	„ 18	„
Whalers	„	„	30	„ 22	„
Skiff dinghies		„	18	„ 16	„

In the station for 'Abandon Ship,' the capacity of the different boats are assessed (roughly) in the following proportions.

Picket Boat	90 men.
Steam Pinnace	46 „
Launch	140 „
Pinnace	90 „
Barge. (34 ft.)	66 „
Cutter. (30 ft.)	49 „
Gig. (30 ft.)	26 „
Whaler. (27 ft.)	24 „

Steamboats range in all sizes and descriptions from the stately 56 feet picket-boat, to the priming fussy 25 feet cutter—generally known as 'the sudden death.'

Steamboats when inboard, should have their funnels up in harbour and down at sea.

NOTE :—Carvel built boats are much stronger than clinker, as they are constructed in two thicknesses. The planking of a carvel built boat is worked in at an angle of 45° to the keel. Good boats are always copper fastened.—The old Viking ships were clinker built.

The longest ash oars supplied are 17 feet for launches, etc.

The shortest ash oars supplied are 8¼ feet for dinghies.
„ longest fir „ „ „ 17 „ galleys.
„ shortest „ „ „ „ 12 „ gigs and skiffs.

Ship's awnings are made of 24 inch canvas, size No. 1.
Boats' sails „ „ „ „ No. 6
„ awnings „ „ „ „ No. 8
„ ensigns are No 4 breadth viz :—2 yards by 1 yard.
„ grapnels range from 45 fathoms of chain to 3½ inch hemp.

Boats' anchors run from 120 lbs. to 20 lbs.—usual weight of a cutter anchor 40 lbs. to 32 lbs.

A boat's anchor may be used for a purpose other than anchoring, i.e.—when towing, it is useful to slide down a long painter to give weight to the tow in bad weather.

Boats barricoes hold from 10 to 6 gallons of water.

A canvas water tank is made of stout unpainted canvas, with two parts of canvas, top and bottom, roughly tapered off at both ends, and the sides brought together by being marled into a roping—on the top of the tank is a canvas funnel. A boat's tank is usually filled on shore and pumped out alongside by the hand fire-engines. If watering from a stream, it is often necessary to dam the mouth to make depth for the suction hose to work, and it is not advisable to

attempt to sail back in the boat, however fair the wind, with the tank full. Always bear in mind that if a loaded launch or pinnace does get into difficulties under sail, the greatest factor possessed for easing a labouring boat is to drop the peak and scandalize the mainsail.

The upper blocks at the davits' heads for boats falls are in charge of the carpenter, the lower, in that of the boatswain.

A Reference to the Sailor's Food.

For years past, much, very much, irresponsible debate has gone on in a 'certain place' regarding the poor *matelot's* victuals but he is not starved; on the contrary he doubtless often wishes that he was 'ollow, and also the possessor of an iron jaw that would never tire, and so allow him to continuously enjoy the several luxuries that a grateful nation lays before him.

Here are some of the dishes of his good and varied *menus*, and many are to be found in the best London restaurants, only disguised under other names.

Dish.	Ingredients.
'Burnt offering.'	— Any roasted meat.
'Schooner on the rocks.'	— Roasted meat upon potatoes.
'Yankee hash.'	— Cut up beef, tomatoes, etc. (stewed).
'Oosh-me-gosh.'	— Sliced beef with vegetables, etc. (baked).
'Three-decker.'	— Slices of beef, divided with layers of suet pudding according to number of decks required (the whole boiled in a pot).

'Steerage-'ammick.'	— Pork, currants and raisins laid in a pudding, lashed up in a cloth representing a hammock, and then boiled.
'A march past.'	— Meat placed on pudding and baked in a dish.
'Curranty-doo-boys.'	— Dumplings and currants.
'Figgy dough.'	— Raisin pudding.
'Acting rabbit pie.	— Beef and bacon made into a pie and baked.
'Fanny Adams.'	— Preserved Australian tinned mutton (so called, as a Fanny Adams was once potted there).
'Soft tack.'	— Soft bread.
'Hard tack.'	— Biscuit.
'Underground fruit.'	— Vegetables.
'One-eye steak.'	— Bloaters.
'Deep sea beef.'	— Haddocks.

Recipe for making 800 lbs. of bread :—Flour 650 lbs., water 32 gallons—80°, salt 6 lbs., yeast 8 pints—made from hops and malt.

Galley fittings include :—Tormentor, coal shovel, bone shovel, flesh hook, poker, tub and coal bucket. The cook's funnel, for the cleanliness of which he is responsible, is known as 'Charlie Noble.'

Men *used* to average in weight about fifteen to one ton, but what they scale now with all this stuffing, heaven only knows—eight bluejackets with their kits, average the same.

But to be serious.—An entirely new system for the victualling of the Navy was introduced as recently as October 1907. Probably the chief defects of the old scheme being :—

1.—The monotony of the rations.

2.—The general lack of elasticity.

3.—The cumbersome nature of the savings system.

The new order of things, as briefly summarised, provides a standard ration (value, approximately, 6d. per diem.) together with a messing allowance of 4d. per diem, the latter being available not only for expenditure on luxuries in the canteen, but also for taking up Government provisions on board in addition to the standard ration.

The standard ration is as follows :—

Article.	*Allowance.*
Bread	—1 lb. (or ¾ lb. Bread and ¼ lb. flour).
Fresh Meat	—½lb.
Fresh Vegetables	—1 lb.
Spirit	—⅛ pt.
Sugar	—4 ozs.
Tea	—½ oz.
Chocolate	—½ oz.
Condensed Milk	—¾ oz.
Jam, or Marmalade	1 oz.
Preserved Meat	—4 oz. (On one day of the week in harbour, and two at sea).

Mustard, Pepper, Vinegar, and salt as required.

Fleet Paymaster Tom Seaman (who is possessed of no mean experience) remarks that as far as can be judged in the time, the new system appears to be practical and popular. It may safely be said that complete satisfaction to everyone is *unattainable*, but it can be conjectured that the new departure runs in the right channel; and with added experience, there seems no reason for its not running smoothly.—The principal points to be noticed are :—

(a.) There is little waste in the standard ration,—a great desideratum.

(b.) The essential items of the ship's dietary are *under naval control.*

(c.) A boon is conferred on the messes; in that they are now able to purchase provisions of the best quality from the ship's stores, at a price which does not have to include a canteen profit.

(d.) The men's pockets and interests in such matters as "Sunday dinner allowance," and "Special dinner vouchers," have been duly considered.

The question of the cooking of the provisions (a matter closely allied with the victualling system itself) is one which has recently received much attention. Experience will have to be gained there, but it seems safe to assume that the employment of trained cooks in a ship must, in the long run, prove more economical and more satisfactory than the time honoured amateur 'cook of the mess.'

However, whether present schemes are good, or as yet not quite complete, a fact is still with us to day.—That the

man afloat with his five recognised meals (let alone the many snacks) feeds thundering well; and that further improvements for stowing his hold are ever hull down to windward.

Provisions are packed as follows:—

Spirit:—In casks containing 36, 26, 18, 10 gallons, also in jars of 1 gallon for use in T.B's. Each cask is numbered; the number, quantity it contains, and date and place of packing, is inscribed on its head.

Biscuit:—In tin lined cases of 100, 80, 40, and 30 lbs.

Sugar:—In casks of 280, 180, and 150 lbs., also drums of 200, and 100 lbs.

Chocolate Ordinary:—In cases of 100, and 50 lbs., also of 25 lbs. for T.B's.

Chocolate Soluble:—In cases of 50, and 25 lbs., also of 25 lbs. for T.B's.

Tea:—In chests, weights vary between 50, and 80 lbs., also in tin canisters of 5, and 10 lbs. for T.B's.

Coffee:—In cases of 56lbs.—The coffee is not loose in cases, but in 14, 7, and 1 lb. tins

Milk:—In cases of 36 lb., 48 tins in a case.

Salt Pork:—In casks of 200, and 100 lbs.

Peas:—In casks of 160, 100, and 80 lbs.

Celery Seed:—In canisters of 5, and 1 lb.

Flour:—In casks of 250, 180, and 150 lbs.

Preserved Suet:—In cases of 48 lbs.—48 tins in a case.

Rasins:—In cases of 120, and 118 lbs.

Oatmeal:—In casks of 200, and 100 lbs.

Mustard:— } In cases of 100, and 50 lbs.—The cases con-
Pepper:— } tain tins of 10, 5, and 1 lb.

Salt:—In drums of 224, and 112 lbs.

Vinegar:—In casks 36, 26, 18, and 10 gallons.

Lime Juice:—In cases of 40 lbs.—Each case contains 10 bottles.

Rice:—In casks of 200, 180, 100, and 80 lbs.

Jams:—In cases of 48 lbs.—Each case contains 24—2 lb. tins, or 48—1 lb. tins.

Preserved Vegetables:—Cases of various weights.

Preserved Meats:—In cases of 36 lbs.—Each contains 6, 4, 2, or 1 lb tins.

AMOUNT of provisions an average ship will stow.

Articles.	Amount.	Articles.	Amount.
Spirit	10800 pts.	Suet	336 lbs.
Biscuit	6600 lbs.	Rasins	960 lbs.
Sugar	20000 lbs.	Oatmeal	400 lbs.
Cocoa	4000 lbs.	Mustard	340 lbs.
Tea	2600 lbs.	Pepper	200 lbs.
Coffee	2800 lbs.	Salt	2240 lbs.
Milk	5400 lbs.	Vinegar	2800 pts.
Peas	1840 lbs.	Lime Juice	240 lbs.
Celery Seed	10 lbs.	Rice	1800 lbs.
Flour (Trade)	60000 lbs.	Jams	6240 lbs.
Flour (Kiln Dried)	4200 lbs.	Boiled Beef	4320 lbs.
Compressed Vegetables	810 lbs.	Boiled Mutton	4320 lbs.
Salt Pork	5500 lbs.	Corned Beef	7560 lbs.

Particulars on Clothing.

Articles.	How Packed.	How Marked.
Cloth.	Bales of 68 yards.	Cloth.
Duck.	„ „ 300 and 150 yards.	Duck.
Flannel.	„ „ 210 yards.	Flannel.
Serge.	„ „ 168 „	Serge.
Drill.	„ „ 150 „	Drill.
Jean.	„ „ 30 „	Jean.
Stockings.	„ „ 100 and 150	K.
Socks.	„ „ „ „	M.
Shoes.	Casks of 25 pairs.	Shoes.
Boots.	„ , „	Boots.
Combs.	Generally packed with badges.	Combs.
Scissors.	Cases of 144.	Scissors.
Knives.	„ „ „	R.
Razors.	„ „ „	Razors.
Ditty Boxes.	Cases of 10.	Ditty Boxes.
Comforters.	Bales of 200, 100, and 50.	P.
Black Silk Handkerchiefs.	„ „ 100.	Q.
Ribbons.	Parcel.	Ribbons.
Towels.	Bales of 100 and 50.	Towels.
Serge Materials.	Bales of 50.	Serge Materials.
Beds.	Bags of 3.	Beds.
Blankets.	Bales of 25.	Blankets.
Bed Covers.	„ „ 100 and 50.	Bed Covers.
Shirts.	„ „ 100 and 50.	Shirts.
Blue Jean Collars.	Bales of 100 and 50.	Blue Jean Collars.
Sennet Hats.	Cases of 15 and 12.	Sennet Hats.

Clothing, continued.

Articles.	How Packed.	How Marked.
Jerseys.	Bales of 100 and 50	N.
Tobacco Leaf.	Biscuit Cases of 120 lbs., and Casks of 80 lbs.	Tobacco.
Tobacco Tinned.	Cases of 21 lbs. each case. 42—½ lb. tins.	Tobacco.
Housewives.	Case of 50.	Housewives.
Brushes.	Cases of various amounts.	Brushes.
Bags.	Bales of various amounts.	Bags.
Soap.	Cases of 100 lbs.	Soap.
Cap Boxes.	Cases of 20.	Cap Boxes.
Lanyards.	Bales of 1008.	Lanyards
Caps.	Cases of 30 and 25	Caps.
Hat Cases.	Bales of 50.	Hat Cases.
Cap Covers.	Bales of 300, 150, 100.	Cap Cover.
Vests, Flannel.	Bales of 100 and 50.	G.
Badges.	As required.	Badges.

Origin of "Piping the Side."

The Custom came from the old days when fleets were many months at sea, and constantly commanding officers had to leave their ships to see their superiors—councils of war,

etc. Then, when the sea was too bad to allow the boat alongside, or the ship was rolling heavily, it was necessary to hoist the Captain in over the nettings by a yard and stay, and the men of course worked with the pipe.—Hence the rather disrespectful remark sometimes made to the report.—"Please sir, the Captain is coming onboard!"—"Very good! Hoist him in," etc., etc.

Those entitled to be piped over the side are enumerated below:—

His Majesty the King.

All British flag officers in uniform, and officers actually in command of His Majesty's ships.

The officer of the guard.

All foreign officers in uniform.

Piping the side after sunset is often done, but it is not correct.

Miscellaneous.

I believe the origin of saluting the quarterdeck sprung from the old Roman Catholic days. At that time there was an Image of Our Lady on the quarterdeck of every man-of-war, and the men used to uncover as they passed.

The derivation of the term 'dog watch,'—is a watch *curtailed.*

Two reasons why ashes should not be discharged in harbour:—

Firstly.—They silt the anchorage up.

Secondly.—Local fishing is interfered with, by ashes contaminating the bottom feed.

Varnish is stowed in the spirit room.

If occasion arises to pour oil on troubled waters—hoisting in torpedoes, etc., make a small No. 1 canvas bag, and fill it with oil ; then sew the mouth up, and pierce the canvas twice with a bradawl—after, suspend the bag from over the bows on the side required.

An idea to better unionism in a ship's company when cheering :—

First 'hip,' with whistle—Right arm extended smartly, straight out from the shoulder.

Second 'hip,' with whistle—Right arm swung perpendicularly up over the head.

Third 'hip,' with whistle—Right arm dropped to seize brim of the hat.

'Hurrah,' with whistle—Wave the hat above the head, and cheer.

Whistle alone—Replace the hat, and drop right arm smartly to the side.

A pretty 'ship compliment' to pay to a senior officer publicly leaving a fleet, is to hoist the ships' pendants at the dip as he passes by.

I have made up my mind, after much consideration, to enter below a list of "times" of general drills performed by the Combined Fleet, Lagos, 1907.

I do so, because I am sure that it will be understood that they are not given with any idea of advertising (most hateful word) a single ship—for there was little to choose between any of us; but 'tis only to place on record what can be done when certain drills are *expected.*

Now I am thankful to know—with all right minded Captains,—that prior to exercises, not even a pin of a quarterdeck stanchion is permitted to be started; with the gratifying results, that although drills may take a little longer to complete, they are absolutely thorough; and the best evolutions are generally done at sea.

Friends!—Whist!—Hearken to this legend,—tho' for the truth of it I cannot vouch. Some three years ago to such an extent did this evil of 'preparation for drill' exist, that in a certain battleship a guest who had been dining with the Captain one Sunday night, inadvertently on leaving, tripped over a rope stretched across the quarterdeck; which releasing some gilguy, instantly resulted in the friend in question being straightway flattened to the deck—as awnings, boats' davits, quarterdeck rails, and sky-light covers, with an appalling crash, fell prone at its bidding.—Truly a fitting example of the anticipated 'first ship' in the "clear ship for action" (?) evolution of the morrow.

CLEAR SHIP FOR ACTION.			OUT NETS. 2ND TIME.			IN NETS. 2ND TIME.		
	min.	sec.		min.	sec.		min.	sec.
"Swiftsure"	0	26	"Exmouth"	0	36	"Swiftsure"	1	4
"Duncan"	0	45	"Swiftsure"	0	46	"King Edward VII."	1	5
"Exmouth"	0	48	"Albemarle"	0	51	"Exmouth"	1	24
"Canopus"	1	5	"Duncan"	0	57	"Goliath"	1	32
"Jupiter"	1	15	"King Edward VII."	1	6	"Illustrious"	1	42
"Cæsar"	1	20	"Goliath"	1	8	"Albemarle"	1	42
"Goliath"	1	30	"Triumph"	1	34	"Hindustan"	1	56
"Russell"	1	30	"Jupiter"	1	35	"Cæsar"	1	56
"Cornwallis"	1	35	"Canopus"	1	45	"Russell"	2	0
"Vengeance"	1	40	"New Zealand"	1	57	"Duncan"	2	
"Albemarle"	1	41	"Vengeance"	2	5	"Venerable"	2	6
"Illustrious"	1	43	"Russell"	2	8	"Triumph"	2	20
"Mars"	1	59	"Cæsar"	2	11	"Cornwallis"	2	25
"Britannia"	2	11	"Illustrious"	2	23	"Prince of Wales"	2	54
"King Edward VII."	2	14	"Britannia"	2	27	"London"	3	49
"Implacable"	2	42	"Cornwallis"	2	30	"New Zealand"	3	50
"Africa"	2	43	"London"	2	30	"Jupiter"	4	0
"Triumph"	2	44	"Hindustan"	2	32	"Implacable"	5	24
"Prince of Wales"	2	55	"Hannibal"	2	40	"Irresistible"	5	46
"London"	3	1	"Prince of Wales"	4	30			
"Hibernia"	3	7	"Mars"	6	5			
"Hindustan"	3	7						
"Venerable"	3	11						
"Formidable"	3	40						
"Irresistible"	4	23						

OUT SHEET ANCHOR.			REPLACE SHEET ANCHOR BY HAND			NEGATIVE CLEAR FOR ACTION.		
	min.	sec.		min.	sec.		min.	sec.
"Swiftsure"	4	56	"Goliath"	6	14	"Swiftsure"	0	54
"Exmouth"	6	30	"Cæsar"	6	20	"Duncan"	0	55
"Triumph"	6	57	"Swiftsure"	7	40	"Exmouth"	1	26
"Goliath"	8	50	"Illustrious"	7	40	"Jupiter"	1	35
"Duncan"	9	3	"Canopus"	7	43	"Goliath"	1	40
"Implacable"	10	0	"Duncan"	7	47	"Canopus"	1	44
"Britannia"	10	0	"Jupiter"	9	0	"Vengeance"	1	44
"Canopus"	10	24	"Vengeance"	10	25	"Russell"	1	58
"Hindustan"	10	44	"Albemarle"	10	25	"Cornwallis"	2	15
"Cornwallis"	11	0	"Mars"	11	30	"Irresistible"	2	17
"Cæsar"	11	0	"Russell"	11	44	"Albemarle"	2	31
"London"	11	5	"Exmouth"	12	55	"Mars"	3	28
"King Edward VII"	11	59	"Prince of Wales"	12	55	"Prince of Wales"	3	46
"Illustrious"	12	2	"King Edward VII"	13	52	"King Edward VII."	3	44
"Prince of Wales"	12	48	"Hannibal"	14	22	"Cæsar"	4	8
"Jupiter"	14	55	"London"	15	35	"Hindustan"	4	24
"Russell"	15	50	"Cornwallis"	16	30	"Britannia"	5	28
"Albemarle"	15	55	"Implacable"	20	13	"Venerable"	6	10
"Irresistible"	16	10	"Formidable"	21	35	"Africa"	6	23
"Africa"	16	40	"Hindustan"	28	7	"Triumph"	8	1
"New Zealand"	17	32						
"Vengeance"	18	40						

NOTE.—Many ships spread quarter-deck awnings in under 20 seconds.

Iron Shackles generally found in a Man-of-War.

NAME.	PURPOSE.
Anchor shackle.	For securing a cable to an anchor, fitted with a forelock.
Cable, or joining shackle.	For shackling two lengths of chain together; the pin of the shackle flush at the end secured in its place by small pin and leaden plug—cable is joined with bow of shackle forward.
D shackle.	An elongated shackle for joining the end of the messenger together—it has a flush ended pin,—it is now seldom seen.
Spring hook.	A large hook fitted with a spring bar as mousing—used for hooking to the ring of a buoy to hold the ship in conjunction with a 4″ wire while the cable is being shackled on.
Rocking shackle.	Sometimes supplied; it is a shackle used for a mooring buoy.

Bell and harp shackles—have disappeared with the clews of the topsails and courses.—Their last flap went with the passing of the training brigs; and as those royals dipped below the horizon, so also departed from the lower deck the remnants of that peculiar nerve and simple 'power of resource' which indeed made the sailor a handy man.

Different Descriptions of Buoys.

NAME.	DESCRIPTION AND USE.
Nun buoy. —	A conical buoy used afloat as an anchor buoy. At sea it denotes a wreck, and is painted green.
Can buoy. —	Flat topped— used as a port hand buoy to denote a passage, it is painted red.
Conical buoy. —	Used for marking the starboard hand of a passage, it is painted black.
Spar buoy. —	A wooden spar moored with chain and anchor by its end; the upper end shows above the water and marks rocks or fair-ways.
Breeches buoy.—	Is a buoy used in the rocket-life-saving apparatus, and travels on the hawser.
Life buoy. —	More than useful in the water, and its value is not despised even on shore—it has been known to assist in the decoration of ballrooms.
Pillar buoy. —	A broad floating case of wood with a central structure—it is moored to denote special position.
Bell, and whistle buoys. —	These are mechanical sounding buoys, and are for the same purpose as above.

'Gas boy.' — Generally used for blowing its own trumpet—one is to be found in almost every wardroom of His Majesty's ships and vessels.

NOTE :—Spherical buoys, painted half black and half red, surmounted by basket and globe, mark middle ground ; fairway buoys are also spherical and painted black and white.

Ordinary mooring buoys are usually coated with zinc. A nun buoy is bled through a hole in its upper portion, which is filled up by a removable screw.

Here are half a dozen suggestions for improving 'Lower Deck Conditions' on commissioning a ship ; and although the strict letter of the law is perhaps exceeded, still if the end justifies the means, doubtless fault will not be found :—

1.—For the day of commissioning, make special arrangements for the noon meal.

2.—Give the ship's company a fair start by cancelling all incomplete punishment.

3.—Treat 'general' leave men as 'special,' and 'limited' as 'general' ; and warn those concerned that this concession is given as an inducement to refrain from leave breaking—men in the second class for conduct not to be included.

4.—A man that comes off to his leave, but drunk, provided that he is not riotous, should be treated with greater leniency than the man who breaks his leave, but returns sober.

5.—See that places are apportioned for smoking which will be dry in wet weather.

6.—Set aside a space (probably a casemate) for reading, writing, games, etc.—this is especially desirable for foul weather.

7.—When time will admit, follow an idea of Commander R. Newton of the "Archdeacon" ("Venerable"), and construct a long copper lined trough, somewhere out of the way in the waist, and handy to hot water ; to be used by the men to wash their hands before meals, after dirty work.—Some drastic legislation will be required to safeguard the soap.

NOTE:—A routine should also be drawn out to admit of every member of the ship's company having a wash all over once a week.

8.—Inspect the lower deck on the first *dull* day after commissioning, and see that all messes are properly lighted.

9.—If the men prefer it, serve the grog out before dinner instead of at one bell. It's a tip I got from Captain Bradford, and I believe one day it will become universal, it's only natural that a man likes his liquor with his food.

10.—Men in the report and defaulters should never be kept waiting when fallen in for investigation ; neither should meal hours be interfered with.

11.—Clothe the ship's company according to the *conditions of weather*, not as a matter of dates or routine.

Orders for the Gangway.

THERE are dozens of standing orders onboard every ship of the fleet, but I enter this sketch of 'orders for the gangway,' as it's there where trouble most often occurs; and the corporal of the gangway is an individual who occasionally is expected to be in half a dozen places at once.

In all big ships—especially in home ports—there should be a gangway messenger.

The corporal of the gangway should not leave the gangway except for rounds, or by order of the officer of the watch or commanding officer, and he must first inform the quartermaster of his intended absence.

He should go the rounds every half hour at night, at irregular periods from 'pipe down' till the hands are turned out in the morning, recording the fact, time by time, in the night rounds book—the barbettes, upper deck casemates, and heads should be especially visited.

He will take charge of all prisoners at night, visiting the cells twice in the middle and once in the morning watch; he should also record the temperature, and the officer of the watch should sign the rounds book on the completion of the watch.

On the return of men from leave, they are to be fallen in and the master-at-arms sent for up to 11 p.m., and after 6.30 a.m.

No man should be allowed to come onboard at night after leave has expired, unless under special circumstances.

The corporal will examine all parcels, baskets, and packages, coming in and going out of the ship, except those the property of the officers.

He will not allow slops or beef to be taken out of the ship unless accompanied by a regulation pass.

He is to send to the master-at-arms when wine, ale, or spirits, come alongside for shipment.

The corporal is not to let any tradespeople into the ship unless passed by the master-at-arms. Visitors are not allowed onboard during working hours or after evening quarters without special permission.

He will call the ship's police at the same time as the boatswain's mates in the morning; and he will inform the master-at-arms if anyone is allowed to lie in.

When marines are concerned, he will send for the senior sergeant in place of the master-at-arms.

No bailiff should ever be permitted by the corporal to pass the gangway of any well regulated man-of-war; but should one of those gentlemen ever make his unwelcome appearance onboard, I can but suggest a practical method for meeting the situation, which on the occasion that I have in mind, was attended with the greatest success.

Many years ago a midshipman serving in H.M.S. "Minotaur" had been beguiled into the net of a sheeney man —a resident of the Common Hard, Portsea. The ship

was about to go to sea, but the impecunious snottie found himself most awkwardly placed; for on going down to the steerage just before the ship cast off from the jetty, there, comfortably seated on his little all—his sea chest—he saw an unmistakable emissary of the law who had arrived 'in execution.'

The unpleasant news was all over the gunroom in a second, but just as quickly a plan was arranged for the discomfiture of the bold intruder.

The gunroom was immediately cleared of everyone with the exception of four stout snotties under the jolly boat, and two of the tallest members of the mess who stood one each side of the door out of sight, inside the gunroom.—Over the door they held a rug of many colours.

All being prepared, the bankrupt gently and timorously approached the man in possession, and asked him in pleading tones to let him off and he would pay when he returned to port; but in spite of the softest words, it all proved, as we surmised, utterly fruitless—the hard hearted myrmidon would not stir. His victim now appeared to be greatly upset, and with much apparent caution he made one last appeal. He whispered.—"Well! Anyhow, come into the gunroom and have a glass of grog and talk it over.

Beyond all expectation the bait proved more than tempting; the bailiff saw no harm, and knew no guile; so straightway he innocently followed his tempter to his doom. No sooner was his bullet head inside the door than down came the rug, and in darkness and half smothered he was

quickly hove over the table, while legs and arms were seized and immovably held by six pairs of strong arms and willing hands. The rug was then readjusted and securely lashed with a knife lanyard around his neck ; then with the business end of a dirk scabbard he received on a 'certain place' a dozen of the best. The correction completed, the administrators of justice—not law—by pre-arranged signal, let go together and *flew* ; and by the time our temporary visitor had got his head out of the rug there was not a soul in sight, while the possessor of the only face that he had ever seen from start to finish was half way up the fore rigging.

The good commander played the game, he *knew nothing*. And the "Minotaur" sailed away, while the bailiff was ashore procuring summonses without end against those of whom he had no proof beyond a doctor's certificate—if required.

Making the punishment fit the crime

Armourers.

Regulations and principals governing the work of the Armourers, and Weekly Working Routine. (Peace time.)

1.—The Chief Armourer is responsible for the proper execution of all work, for its general supervision, and that all routine hours are strictly kept. He is to get the Daily Work Sheet from the Lieut. (G), and put it in a conspicuous place in the shop the night before. It will contain each man's work : also the number of the routine being worked by the staff.

He is to keep a Time Sheet for the work, and have it placed in the Gunnery Office by noon on Saturday, in order to assist the Lieut. (G) in the rapid compilation of Form S, 163, (Weekly Return of Employment of Artisan Ratings).

2.—The Senior Armourer present is to call the armourers to attention should the Captain, Commander, Commander (N), or any distinguished personage visit the shop. The Senior Rating on board is to stand rounds on Sunday.

3.—Armourers attend Divisions on Sunday and Quarters every day, when working in Nos. 4, 5 and 6 Routines. All armourers attend every General Drill for which they have special stations (see Gunnery Staff Stations in Gunnery Office).

4.—The Armourers' names are to be entered in the "G" Staff Leave Book which is signed daily by Lieut. (G) at 12.30 p.m. before forwarding to Commander. Lieut. (G) will not forward to Commander requests for leave during working hours whilst Nos. 1, 2, and 3 Routines are being worked, unless the reason is of great urgency. Under ordinary circumstances one armourer rating must always be on board after working hours—under special circumstances a watch—Lieut. (G) will decide whether the circumstances are ordinary, or special. The Chief Armourer is to tell off daily one armourer as "Duty Armourer," who is available for odd work after working hours.

The one remaining on board may be the "Duty Armourer." The name of the Duty Armourer is to be on the board in the Gunnery Office for information of Lieut. (G).

The Chief Armourer is not to be included in either of the above, his absence from the ship being governed by special circumstances.

5.—Ratings (2 Seamen and 2 Marines) qualifying in armourer's work, work in every way as armourers, and are affected by the same pipe—*i.e.* "Clear Lower Deck." Every facility is to be given them to gain useful knowledge by the men to whom they are attached as mates. In order to broaden their minds in the methods of different individual craftsmen, they are attached in turn to each armourer during their 12 months' course.

The pay when filling a vacancy being high, all work done during the 12 months will be considered examinational,

and will be inspected from time to time by the Lieut. (G) and Chief Armourer.

Q.A. men should endeavour to thoroughly realise the responsibilities of their position. The Lords Commissioners of the Admiralty inaugurated this scheme to create a reserve of armourers for the fleet, and in times of national emergency they would be drafted as armourers with correspondingly increased rates of pay. Furthermore, it is to be remembered that a knowledge of working tools and familiarity with mechanical appliances generally, will give a man a far greater market value on leaving the Service either for Fleet Reserve or pension.

6.—No private work of any kind, such as the repair and cleaning of fowling pieces, repair to sextants, binoculars, cabin locks, clocks, etc., is ever to be taken in hand without the permission of the Lieut. (G).

If the Service admits, it will then be told off as an ordinary job and will take its turn with the work in hand.

7.—No one is allowed in the armourers' workshop except the painters, torpedo party going to guncotton store, and the cable party ; and anyone coming down is to be immediately instructed to that effect.

8.—Before making screws, nuts, bolts, split pins, springs, and other standard articles, make certain that there are none available that can be spared for use by the officers in charge of Engineers, Gunner (T), Boatswains', and Carpenters' stores.

9.—Each armourer is responsible for the mechanical efficiency of that portion of the armament, magazines and Shell Rooms for which he is told off (see Station Bill in Gunnery Office), and is held jointly responsible with the Captain of the Gun that every working portion of the gun, mounting, and gear is free from paint and rust, and is kept constantly lubricated; also that such things as oil screws, securing and set screws, split pins, are always in place and properly screwed up, and aiming rifles ready for instant use.

In addition to serving out oil and tow at quarters and thoroughly lubricating all working parts at least three times a week, each gun of his group or turret should be carefully searched for defects, the same being noted and placed on a chit on the file provided for the purpose in the Gunnery Office; but small screws, split pins, etc., should be at once replaced during cleaning quarters without report.

He is also to be careful that chain loading purchases, door hinges, port hinges, sighting hoods, rammer hinges, spare parts, locks, breech fittings, etc., are in a thoroughly efficient state and ready for instant use. Two minutes with an oil can, intelligently used at quarters, will save hours of subsequently refitting work.

The above remarks also apply to the Instructional Appliances which are attached to groups and turrets, and they are to be tested daily at quarters, so that no delay occurs after divisions on the arrival of a class.

Be careful to do nothing to a gun which in any way usurps or even borders on the functions of its captain, but

work with him to the common end of efficiency, and keep him informed of any mechanical alterations and additions which are in progress, and the reason for them.

As far as possible the Lieut. (G) will always tell off the armourer of a gun to make good all defects and attend its firing, so that he is in constant touch with its peculiarities and requirements.

A dirty bore, an unreported defect, or an inefficient piece of mechanism, is a very grave matter, and will always end in the armourer in charge of it being called very seriously to account.

10.—In addition to their turrets and groups, the Chief Armourer is responsible for the efficiency of the machines in the workshop,—the lathe, drill, and shaping machine, and the motor shafting for driving them; also for the four saluting guns and the man and arm boat mountings, which latter should be examined weekly and the locking bolts worked. The armourer for the maxims, field stands, 12pr. field guns, carriages, limbers, and spare gear in workshop and store. The remaining six ratings as told off for ammunition passages, purchases, transporting tongs, overhead rails, shell rooms and magazines.

All armourers clean their aiming rifles immediately after use, and keep them in constant repair and readiness.

11.—*Cleaning Bores of Guns.* When "Secure" is sounded after general quarters on Fridays, all tompions will be left out outside the guns to save delay, and the six hydraulic R.I. and O 7.5's left out.

Turrets' crews under turret armourers clean out and oil their own guns, and sweepers clean and replace tompions. Thus A and B groups will have 4, and X and Y group 3 men assisting the group armourers.

Four men will be told off, 2 forward and 2 aft, under light Q.F. armourers to clean and oil bores of 12 and 14 pounders.

The four Q.A. men, after providing oil and tow for turrets, will clean and oil bores of the four saluting 6 pounders, and the four maxims.

The work should be finished by 11.45 to give sweepers time to run in guns and clear up before dinner.

If circumstances prevent this routine being carried out, special arrangements will be made by Lieut. (G) in consultation with Commander, but bores of all guns should be done once a week at least.

Immediately after a salute, the Q.A. men will clean and oil bores of 6 pounders, and strip down, clean and reassemble breech mechanisms. Immediately before a salute, when bugle goes, Chief Armourer is to examine mechanisms and guage strikers of saluting guns.

All gun will be cleaned out and oiled immediately after firing, no matter what time finished; also following day, and inspected either by Lieut. (G) or Gunner (or Chief Armourer if both happen to be out of the ship simultaneously) on conclusion.

12.—Lifebouys are to be dropped overboard during Quarters holystone gun gear on Saturday morning, and triced up and replaced by 6 pdr. crews under turret armourers. The same armourers will drop them into a sling, immediately before going to sea; and on first Saturday in month they are to be dropped with calcium light attached. In every case the Chief Armourer is to report their state to Lieut (G) and see that the correct entry is made in the ship's log.

13.—Beyond the Chief Armourer, who has special permission, no clothes chests are to be kept in the shop, nor clothes washed or hung up to dry there.

The tool chests are to be kept in their proper storage—painted, and tallies cleaned.

Armourers may wear an overall suit when at work, but are to be in the proper rig when on deck for drills.

Some men in the Service have an idea that because they are employed on dirty work and do not attend divisions, hair cutting and shaving is unnecessary. This is not the case. The Lieut. (G) will do the duty of an Officer of Division in this respect.

14.—Armourers should remember that the Gunnery Staff is under constant obligation to other departments, notably torpedo-men for care of circuits, fire control gear, bells etc., (without which efficient guns are useless), carpenters for watertightness, blacksmiths for forgings, plumbers for voice pipes, etc., etc.; and if owing to heavy work in another department they are told off to assist, they are to en-

deavour in every possible way to give satisfaction to the officers in charge of it. Particularly is this the case before and after fleet practice with torpedoes, when assistance is often required in overhauling and making good small mechanical defects, also when illuminating ship for repair of lamphooks and springs.

15.—*Fighting Stations.* Provide electric and percussion tubes, tools for shifting parts and extracting tubes, clearing vents, gauging locks, etc., etc. Pay particular attension to R.I. and O. guns of his group, in case any mechanical assistance is required. Then report himself to officer of quarters as "Armourer of Group" or "Armourer of Turret." Overhaul spare parts and see they are ready for instant shipping, and when "Ready Position" bugle sounds, which means men not fighting primary armament take post behind armour, proceed to ammunition passage and station himself at bottom of a hoist, so that if required, the group officer can get him by hailing down the voice pipe.

Turret armourers ditto, except take station in hanging chamber. Light Q. F. armourers ditto, except take station in after cross passage by voice pipe from chart house on after bridge. The Light Q. F. armourers take up position with their sections of armament when "repel T. B. attack" is sounded and guns are manned.

Exercise Action.—As for "Action," except that each gun is allowed one tube only for testing.

A certain number of rifle blank (with mock bullets removed) are provided as ordered, and the rifles themselves are to be cleaned and oiled directly the "Secure" sounds.

Man and Arm Ship.—(See Station Bill in Gunnery Office).

When the ship remains manned and armed, either in war time or in peace exercises, the armourer ratings to keep watch will be told off by Lieut. (G).

Man and Arm Boats.—(See Station Bill in Gunnery Office).

Small Arm Companies.—(See Station Bill in Gunnery Office). Each armourer being responsible for the efficiency of the small arms of his company.

16.—The Working Routines shown below, are arranged on a sliding scale system which lets the staff see how they stand. According to the amount of work in hand so is a high or a low numbered routine ordered by Lieut. (G.) One man shirking means that others are told off to do his work, which results in the whole staff being kept in a lower numbered routine than would otherwise be necessary.

Similarly, a man turning out careless or slovenly work, which is no credit either to himself, his ship, or the Service, will be put in a lower numbered Routine to renew or repair it.

17.—On Saturday mornings particular care is to be paid to the lubrication of door hinges which may have become waterborne by Saturday's cleaning; also much friction is caused between petty officers of parts and guns through careless handling of oil. Armourers should take every care not to give offence in this respect.

18.—Litmus Paper Test is to be carried out monthly, and litmus shown to Lieut. (G), for Acidity Test of recoil cylinders.

19.—Guard against excessive lubrication of locks before firing, which is one of the greatest sources of missfire, also use tow sparingly, as the Admiralty allowance is cut down to the narrowest margin consistent with efficiency.

In event of finishing a job half an hour or so before routine time, search your groups for defects, examine sighting gear, cross connections, locks, pads, protecting rings, box slides, etc., and see that all are in good order. The breech mechanisms of a ship require consistent nursing and care to obtain efficient results.

No Government stores, whether considered of value or not, are ever to be given away. Masters of colliers, Ammunition Barges, and Lightermen generally, always look on a Man-of-War as a Philanthropic Society in this respect.

20.—In asking for leave under special circumstances, be guided by the fact that the Custom of the Service is to award four days for matrimony, and 48 hours for births, baptisms and burials, and the asking for more may lead to refusal.

21.—The Lieut. (G). should be glad at all times to receive from the staff any suggestions at all, which, if put into practice, are likely to lead to greater efficiency, and in the event of a man doing so, the fact will be immediately brought to the notice of the Captain.

22.—The duty armourer will stand Commander's rounds at 9 p.m. at door of shop, and report "key returned and lights out" as rounds pass.

23.—No smoking is allowed in the shop, and the telephone to and from the Gunnery Office is to be promptly answered, and machines and noise stopped to prevent delay in receiving of message. 1 ring—call up; 2 rings—finish. Make messages as brief as possible. Speak distinctly and be quick.

24.—It is to be most clearly understood that when any piece of mechanism is ordered to be stripped for examination, it is on no account to be reassembled till inspected by the officers mentioned in paragraph 11 of these orders.

It is necessary to call attention to the urgency of defects of all kinds being kept down, and the imperative necessity that exists for a constant endeavour being made to attain the very highest state of efficiency in every mechanical appliance connected with the gunnery of a ship.

It is undoubtedly the intention of the Admiralty to prevent the tendency in ships to rely on dockyards for repairs, and the work of the ship's artificer will be more and more developed as time goes on.

With the supply of necessary material and power driven machinery to ships, combined with the well-known fact that the ship's mechanical ratings turn out better work than a dockyard owing to their closer personal sympathy with their work, the Admiralty wish and expect dockyard costs for repairs to be kept down to a minimum.

Under these circumstances, and with a repair vessel attached to the fleet to make those castings and forgings which really are beyond the power of a ship, she should not arrive at a dockyard with a defect list at all, but examination of ordnance and big additions to a ship must of course remain with the home yards under existing regulations.

Routine.

No. 1.

A.M.

6. 0 Scrub and clean shop, benches, decks, paintwork, etc.
7. 0 Start on daily work sheet.
7.55 Cooks.
8. 0 Breakfast.
8.45 Resume work.
11.45 Cooks. Sweep and tidy Shop.
Noon Dinner.
1.15 Resume work.
3.30 Cooks. 3.35 Tea. 4.0 Resume work.
6.50 Cease work. Tidy shop.
7. 0 Supper. Pack up.

Saturday.

6 a.m. As above in every way, working straight on till 7 p.m. Test lifebuoys.

No. 2.

As for No. 1, except

Saturday.

A.M.

6. 0 Start Work Sheet.
7.55 Cooks. Test lifebuoys.
8. 0 Breakfast.
8.45 Cease work. Clean shop, machines, &c.
11.45 Cooks.
Noon Dinner.
P.M. Make and mend clothes.

No. 3.

As for No. 1, except

5.20 Cease work. Tidy shop.
5.30 Pack up.

Saturday.

As for No. 2.
Make and mend clothes.

No. 4.

As for No. 1, except

3.25 Cease work. Tidy shop.
3.35 Pack up. Supper.

Saturday.

As for No. 2.
Make and mend clothes.

No. 5.

As for No. 1, except

3.25 Cease work. Tidy shop.
3.35 Pack up. Supper.

And Make and mend clothes on Thursday as well as Saturday.

No. 6.

As for No. 1, except

11.45 Cease work. Tidy shop.
Noon Dinner.
P.M. Make and mend clothes.

Make and mend clothes daily.

SUNDAY ROUTINE, WEEKLY—7.0 a.m. to 9.30 a.m. with usual breakfast interval, tidy shop, clean machines, paintwork, etc., and prepare for Captain's rounds.

Nothing definite can be detailed for "War time routines," but it is probable that repair work would have to go on unceasingly night and day—working through the night in watches.

Regatta.

I propose here to enter the procedure of an ordinary Fleet Pulling Regatta, and I take for my example the details of the Channel Fleet Regatta, 1907, as the best run business of the kind that I have ever experienced.

Regatta rules are not drawn up in a day, or without much discussion; but I would earnestly exhort many of the peppery young lieutenants who attend the preliminary meetings as 'ship representatives' to sink all jealousies, and to remember that they are gathered together not to recriminate, but, on the contrary, to arrange a friendly sporting water festival, both for the benefit of the Service and the muscles of the men.

Rules and Programme of Events.

1. The course will be straight if possible and will be laid out by the Committee, who reserve to themselves the power of altering, increasing, or decreasing it if necessary.

2. The decision of the Committee on all occasions will be final.

3. The days on which the events are to come off may be altered at the discretion of the Committee.

4. All boats that compete are to carry the distinguishing colour allotted to their ship.

5. No part of the hull of a boat, nor any one of her crew, is to touch the rounding mark or ship.

6. No boat is to touch another boat, nor are the oars of an overhauling boat to touch the oars of another in taking her water.

7. The following are also rules for disqualification :—

(*a*) Any boat that wilfully, or from neglect, fouls another boat.

(*b*) If a boat alters her course in order to prevent a boat coming up astern from passing her, she does so at her own risk and will be disqualified if fouled.

(*c*) Any outside boat not giving way to an inside boat in rounding a mark, provided that an overlap has been established before the leading boat alters her helm for the purpose of rounding. (It is considered to be an overlap if any portion of the hull be overlapping when the two boats are proceeding on nearly parallel courses.)

8. All objections to be lodged by letter to the President on board the flagship within an hour of the boat's arrival on board her ship. Fee 10s. If objection upheld fee returned.

9. Two boats of a class to start or no prize will be given ; five boats to start or no second prize ; eight boats to start or no third prize.

10. If less than seven boats start in a race, the first boat will receive only the second prize, and the second boat the third prize. If less than four boats start in a race, the first boat will only receive the third prize.

11. (*a*) Boats are to be pulled under service conditions with the service number and description of oars, the crews sitting on their proper thwarts.

(*b*) No extra fittings of any kind are allowed in boats except a long tiller and any stretchers that do not interfere with the structure of the boats.

(*c*) All boats are to be pulled with the shells, thwarts, seats, and keelson boards intact; but any other movable gear, as well as gun mountings, badges, and fore and aft sailing thwarts may be taken out.

(*d*) Bilge keels or hand grips are not to be removed.

(*e*) Boats are not to be blackleaded, nor are they to have false stems or raised thwarts.

(*f*) Boats are not to be out of the water more than a week before the race.

(*g*) None of the crews are to be excused from the ordinary duties of the ship except on the day before and day of the race. They are not to

form a separate mess by themselves for boat racing purposes.

12. The following are the only exceptions to Rule 11 :—

(*a*) In "All Comers'" race, extra thwarts, stools, and any description of oars are allowed, but no outriggers nor any fittings projecting outside the boat.

(*b*) Eight oared double banked boats may pull ten oars putting in the necessary fittings.

(*c*) Seven oared galleys may pull six oars in the six oared races.

(*d*) In officers' races, any description of oars may be used.

(*e*) In launches' race, hammocks may be used to sit on.

(*f*) Service fir oars may be used in all single banked boats.

13. (*a*) In boy's races, men rated since previous January, will be allowed to pull as boys.

(*b*) In races for ordinary seamen, A.B.'s rated as such since previous January, will be allowed to pull as ordinary seamen.

14 Borrowing boats from other ships is not permitted except in Officers' and Cup Races, but in the latter case

only when the ship cannot otherwise take part in the race owing to not having the particular class of boat required.

15. In pulling races, ships smaller than a Captain's command may pair together.

16. In Cup Races, boats are to be steered by a Chief or 1st Class Petty Officer, Colour Sergeant, Sergeant or Paid Lance Sergeant, and in the Boys' races by a Boy. In other races the coxswain may be of any other rank or rating. Officer are not allowed to act as coxswains except in officers' races, but it is optional for them to go in double banked boats so long as they do not steer.

17. No foreign built boat (*i.e.*, Malta, China, or Halifax, or Montagu boat), is to pull in any race except the "All Comers'," which is without any restriction whatever, and in those cases marked "Foreign, etc.," in the programme.

18. All bandsmen are to pull with excused daymen. E.R.A.'s cannot pull with Chief Petty Officers.

19. In officer's skiff races, all skiffs pulling four oars are to have a coxswain.

20. In pinnaces, the crew may be double banked, *i.e.* pull two men to each oar; and in launches treble banked, *i.e.*, pull three men to each oar.

21. Points will be awarded for places obtained in the Pulling Regatta on the following scale:

	1st	2nd	3rd
(*a*) Boom boats and All Comers' Races	5	4	3
(*b*) Cup Races	5	4	3
(*c*) Officers' Gigs	5	4	3

	1st.	2nd.	3rd.
(*d*) Long Course Races	4	3	2
(*e*) Short Course Races	3	2	1
(*f*) All Skiff Races	2	1	—
(*g*) Races for Non-Service Men ...	—	—	—

If the prizes are reduced in accordance with Rule 10, the points awarded will be reduced accordingly.

22. No money prize will be given for officers' races, but entrance fees are as follows :—

Officers' race ... 5s. a thwart including coxswain.
Subordinate Officers' race 2s. 6d. „ „ „
Skiff Races, Officers, 10s; Warrant Officers, 5s per boat.

NOTE :—*In pulling races an Acting Sub-Lieutenant is considered a Subordinate Officer until he presents himself for examination in Part 1.*

23. In all races where different kinds of gigs or foreign built boats pull together, there will be a handicap by length of boat as follows :—

Double banked boats 4 seconds per mile per foot.
Six oared gigs ... 5 „ „ „
Whalers and five oared gigs 9 „ „ „

In six oared gig races, 28 foot boats may compete with 30 foot boats but will receive no time allowance.—32 foot boats only will be handicapped.

24. The number of races and the prizes are subject to reconsideration if the funds are insufficient; or may be increased if the funds are larger than was anticipated.

25. In race for Veteran Officers, the members of the crew are to be over 35 years of age.—(Ed.) Poor old devils.

CHANNEL FLEET. DETAILS OF PULLING CUP RACES.

Designation of Challenge Cup or Trophy.	To be Competed for by		Length of Course in Miles.
	Nature of Boats.	Crews	
Channel Fleet Officers' Challenge Cup.	English-built Six-oared gigs	Commisssioned and Warrant Officers	1
Channel Fleet Subordinate Officers' Challenge Cup.	English-built Six-oared gigs	Subordinate Officers	1
Channel Fleet Duty Cutters' Shield.	English-built 14-oared cutters	Duty Crews	2
Channel Fleet Royal Marines' Challenge Cup.	English-built 14-oared cutters	Marines	2
Channel Fleet Stokers' Challenge Cup.	English-built 14-oared cutters	Stokers	2

PROGRAMME OF RACES.

FIRST DAY.

No.	Time.	Boat.	No of Oars	Crews	Course Miles	PRIZES		
						1st	2nd	3rd
1	10. 0 A.M.	27 ft. Whalers	5	Racing	2	30/	12/	6/
2	10.15 ,,	Gigs	6	C.P.O's	1	35/	14/	7/
3	10.30 ,,	Cutters	14	Stokers	2	75/	30/	15/
3a	10.30 ,,	Cutters	12	Stokers	2	65/	26/	13/
4	10.45 ,,	16′ Service Skiffs		W. Officers	1	...	...	...
5	11. 0 ,,	Cutters (For'n &c.)	14 or 12	Racing	2	75/	30/	15/
6	11.15 ,,	27 ft. Whalers	5	Marines	1	30/	12/	6/
7	11.30 ,,	32 ft. Gigs	6	Racing	2	35/	14/	7/
7a	11.30 ,,	30 ft. Gigs	6	Racing	2	35/	14/	7/
8	11.45 ,,	24 ft. Gigs	4	Racing	1	25/	10/	5/
	Noon	**DINNER**						
9	2.30 P.M.	27 ft. Whalers	5	Excused Daymen	1	30/	12/	6/
10	2.45 ,,	Cutters	14	Ord. Seamen	2	75/	30/	15/
10a	2.45 ,,	Cutters	12	Ord. Seamen	2	65/	26/	13/
11	3. 0 ,,	16′ Service Skiffs		Officers	1	...	...	...
12	3.15 ,,	Gigs (For'n &c.)	6	Racing	2	35/	14/	7/
13	3.30 ,,	27 ft. Whalers	5	Signalmen	1	30/	12/	6/
14	3.45 ,,	Cutters	14	Racing	2	75/	30/	15/
14a	3.45 ,,	Cutters	12	Racing	2	65/	26/	13/
15	4. 0 ,,	Gigs	6	Subord. Officers	1	...	...	...
16	4.15 ,,	Pinnaces	16	Racing	2	85/	51/	17/

SECOND DAY

1	10. 0	A.M.	Cutters	14	Duty	2	75/	30/	15/
2	10.15	,,	30 ft. Gigs	6	R.N. Volunteers	1	35/	14/	7/
3	10.30	,,	Cutters	12	Chief&Petty Officer	2	65/	26/	13/
4	10.45	,,	27 ft. Whalers	5	Boys	1	30/	12/	6/
5	11. 0	,,	16′ Service Skiffs		Racing	1	20/	8/	4
6	11.15	,,	Launches	18	Racing	2	100/	60/	20/
7	11.30	,,	Gigs	6	Officers	1	...	...	...
8	11.45	,,	27 ft. Whalers	5	Stokers	1	30/	12/	6/
	Noon		**DINNER**						
9	2.15	P.M.	Cutters	14	Marines	2	75/	30/	15/
9a	2.15	,,	Cutters	12	Marines	2	65/	26/	13/
10	2.30	,,	27 ft. Whalers	5	Artisans	1	30/	12/	6/
11	2.45	,,	28 ft. Gigs	6	Racing	2	35/	14/	7/
12	3. 0	,,	16′ Service Skiffs		Veteran Officers	½	...	...	...
13	3.15	,,	Whalers (For'n &c.)	5	Racing	2	30/	12/	6/
14	3.30	,,	Gigs	6	E.R.A's	1	35/	14/	7/
15	3.45	,,	Cutters	14	Short Service	2	75/	30/	15/
16	4. 0	,,	27 ft. Whalers	5	Ord. Seamen	1	30/	12/	6/
17	4.30	,,	**ALL COMERS**			3	120/	60/	30/15/

NOTE 1.—Races 2, 5, 12, 15. of 1st day, and 7, 13 and 14, of 2nd day, will be handicapped in accordance with Rule 23.

NOTE 2.—In Races 3 and 3a, 7 and 7a, 10 and 10a, and 14 and 14a, of 1st day, and 9 and 9a of 2nd day, the Coxswains of boats in "a" races are to wear blue jumpers; the Coxswains of boats in the other races wearing white jumpers.

NOTE 3.—In Race 17 of 2nd day (All Comers) only one of the four prizes will be awarded to each nature of boat. The natures of boats will be classified as follows:—

(A) Boom Boats; (B) 34 ft. Cutters; (C) Cutters under 34 ft.; (D) Galleys and Gigs; (E) 28 ft. Boats and under.

NOTE 4.—In the All Comers race, the points are awarded to the *first* three boats, irrespective of the class to which they may belong; but the prizes are given to the first boat of *each class* past the post.

Yarns connected with regattas are endless, but I think the following extraordinary sequel to some pulling races will bear the telling.—It occurred just thirty years ago.

My ship was lying at Port Said, when the Captain received an invitation from the Egyptian Government (it was in Ismail's time) to bring the ship to Alexandria to take part in the annual regatta of the Egyptian navy.—I should say that the seamen of that force were practically all pressed men, and although fed, were but seldom if ever paid; and this regatta, at which the prizes were extremely handsome, was their one means of providing anything towards their wages.—This we did not know at the time.

Round the ship went.—Hard we pulled.—And much to the astonishment of ourselves and all others—for these Gippies are men of brawn—we won nearly all the prizes; one especial boat, our galley, stroked by a man known in the fleet as "double stroke Clare", ran away from everything, and the natives bitterly called her 'that long white felucca' which they could not understand.

At the conclusion of the regatta Ismail was furious. In a friendly way he sent for our Captain, and intimated that his crews were not quite ready, and proposed that one more event—a galley's race—should be held three weeks hence. And as time was no object to our Service in those days, to this suggestion the Captain readily assented.

The next thing we heard was that the Khedive had given an order that the English boat *had to be beaten.*—If his crew won, they were to have 10,000 piastres (£100), and if they lost, the mild alternative of three years' imprisonment.

The great day arrived, and Ismail turned out in all his state from Ras-el-din Palace, followed by the whole of fashionable Alexandria to see the fun. The start was from a rope between two lines of boats, the race was round a buoy and back, and the winner to be the first boat to touch the same rope with her stem. We expected only one boat to compete, but to our surprise there were six, and in the middle of the six the English galley was placed—and we had not long to wait for the reason.

Immediately the pistol was fired, one selected Egyptian boat (a green one) shot out; but the other five, instead of attempting to race, straightway fell upon our boat tooth and nail; and not till their champion had got some half a mile away, and many of the members of their crews had been laid out by our men with the blades of their oars, did they relinquish their attentions and free our galley.

Pursuit seemed hopeless, but away went Clare, and although they considerably shortened the lead, to win was apparently impossible.—But listen to what now happened.

The crew of the green boat were so excited at the prize being so nearly in their grasp, that when within twenty yards of the rope they one and all jumped overboard for very joy; but alas for them, their boat had not enough way to reach the rope. Too late they realized it. One man indeed swarmed back and began frantically paddling with an oar, but all to no use—the long white boat that they could not understand, came in and won once more.—Then the police appeared.

Suggestions for an Afternoon Gymkhana.

	Time.	Event.	Prizes.
1.	1.30 p.m.	100 yards Flat. (heats).	1st & 2nd.
2.	1.50 p.m.	4 Legged Race. (3 men).	1st
3.	2. 0 p.m.	Gun Wheel Race, run with wheel around a post 50 yds away and back.	1st & 2nd.
4.	2.20 p.m.	¼ mile Flat (heats).	
5.	2.35 p.m.	Subordinate Officers Pick-a-Back. (about 60 yards).	1st & 2nd.
6.	2.45 p.m.	Backward Race (50 yds). No man to turn head or body.	1st & 2nd.
7.	3. 0 p.m.	1st round of Tug of War.	
8.	3.30 p.m.	100 yards Flat (final).	1st & 2nd.
9.	3.40 p.m.	Mêlèe. Teams of 4 couples. Teams to provide their own helmets and single sticks. One man with helmet and single sticks rides on the other man's shoulders. Each man has a coloured cockade in his helmet. At a given time the teams will advance. When the 'retire' is sounded, the team which has most cockades will be the winning one. (Prizes for Winning team. Cockades provided).	

10. 4. 0 p m. Wheelbarrow race in costume (25 yards round a post and back. Change rounds half way). Prize for best costume, and prize for winning pair.

11. 4.15 p.m. Final ¼ mile Flat. 1st & 2nd.

12. 4.30 p.m. Second round and semi-final of Tug-of-War.

13. 4.50 p.m. Boot Race (every competitor to bring his own boots distinctly marked). Before the race all boots are put in a pile at a distance from starting line. Race to boots, put on own boots, lace up and race back.—Competitors need not be particular how far they throw boots they pick up which do not belong to them. 1st & 2nd.

14. 5.10 p.m. Officer's race. Run to a table, drink a glass of water, eat a biscuit, light a cigar, and race back with the cigar alight. 1st & 2nd.

15. 5.25 p.m. Final Tug-of-War. (Prize to winning team).

P.S. (a) Not more than 2 teams from each ship may enter for Tug-of-War. Destroyers may combine.

(b) Post entries. (c) Competitors are particularly requested to be at post 5 mins. before each event. Bugle will sound assembly, and race will start not more than 5 min. after bugle.

Three Words on Polo.

What polo we get in the Service is principally at Malta and other places abroad, with the exception of perhaps Plymouth—although some say that port is still in foreign parts; and these lines are written to strongly urge any young officer who may be serving up the Straits, or in climes where they play, who can ride—tho' but a little,—to take up this most glorious of all games, if only for the good of his nerves and his health, both of which are so essential in the Navy. And he who has once experienced the furious pursuit of the flying ball, with perfect ponies as his partners in a fast game, need never in his after shell-back days, want for a stirring thought from some hard fought match, to make the blood course the quicker, for the time, through the ricketty timbers of his rotting hull.

Expense need never he pleaded, for ponies can be kept in condition at Malta, to play all the year round, at something under £30 a head—and then you are sure, *of course*, to win the Polo Scurry.

With indulgence—I would like to give the following cautions for the game, which might perhaps help the beginner :—

Firstly :—Know, and understand, the rules.

Secondly :—Learn to play in your place, and how to make your ponies gallop.

Thirdly :—Master the accomplishment (and it is a most necessary one) of how to use and *control* the stick.

Fourthly :—Try and hit the ball, and on doing so, let it be either in the direction of the other goal, or anyhow in a manner (passing, etc.) to benefit your side. It is the greatest fallacy to imagine that because some demon is possessed of a good eye, and can wildly hit the ball all over the ground, he is a good polo player ; on the contrary, he is almost certain to be one of those terrors from the dangerous brigade, and unfortunately it is not generally *his* neck that gets broken.

When hitting the ball, avoid the natural mistake of trying to hit too hard. Do not attempt wrist work till you have learnt to smite the ball straight and true ; and drive from the shoulder--no crooked elbow—with the weight and swing of the stick.

One great error is often committed by many players other than beginners, viz.—the fault of touching, or jugging a pony in the mouth with the action or effort of striking the ball. Animals are constantly ruined in this manner.

As a rule, for a straight drive, the ball should be taken from just behind the girth ; all 'near side' shots must be given with the 'bridle hand' on the withers, and forearm low down ; and till an adept in these pretty and varied

strokes, I would strongly recommend the novice while making them, to keep his left hand still and touching the pommel.

No man has ever ridden off from behind the girth; but he should be gently boomed to leeward by the vigorous pushing of your pony on the other's scapula bone.

Never pull up over the ball. The selfish player is an abomination.—For instance, if you are rushing down on an extended pony to a clean lying pill, with the firm intention of lifting it into the next parish—via the enemy's goal posts; even should your best girl be looking on, refrain from so doing, if by 'taking the man' and leaving the ball to those behind, it will be to the advantage of your side. At all times—blow high, blow low—play, play, the game.

Racing in Malta.

Should you feel inclined to indulge in racing at Malta, and have a friendly cut at your soldier brother; you cannot do better than call in the services of honest Paulo John Saliba, who will initiate you into the mysteries of the turf (?) life of the Marsa far quicker than through any writings of mine. To start with, you will find that his expressions and speech when explaining his methods, require some daily study to comprehend; but when once they are mastered, all you hear is very sound; with perhaps the exception of the time when 'the blood is hot'—usually the day that the weights appear—and then friend 'P.J.' requires a bit of holding.

Paulo will commence by 'presenting' you with, i.e.—allowing you to purchase, some peerless animal from the plains of Aleppo or Damascus. His tail will probably be shaved and hairless (for the luck), and his name undoubtedly striking, and something in the style of "Splendid Youngster." You will be told his tendons are as tough as 'wire rabbit' (rabbit wire),—and there you are, a proud owner.

The next event to happen will be, that after endless early risings to give the pony his morning gallops, your ship will be ordered to sea the day before the races.

Nevertheless possess your soul in patience, and hang on till the next meeting comes along; for absent or present, Paulo will guard your interests with the whole force of his excitable nature. Should you win, a long incoherent telegram will arrive, which to the uninitiated would convey the impression that it was the trainer himself who had run, and not the pony. But if the boot is on the other foot, expect immediately a letter of explanation; and I give here a specimen extract from such an epistle, which set forth how a pony of mine, to wit 'Vino Tinto,' was run off his legs early in a certain race, and consequently beaten in the last furlong.—

> "I remained awfully sorry that 'Vino Tinto' lose that race, but he make the pace really devilish to the first five furlong, and then he got blow up; while he had not again the occasion to rest the wind."

To keep a racing pony at Malta costs no more than £50 per annum, and that sum will cover all entries and fees as well.

Clay Pigeon Shoot.

1. *Ship Competition* to consist of teams of four from each ship. Destroyers working as one ship (No ship to enter more than two teams). Two single rise traps to be used at unknown angles. Each member to shoot at eight birds. The first four birds to be flown singly.

Each bird killed with 1st barrel to count 2 points.
„ „ „ „ 2nd „ „ 1 point.
Misses counting—nil—(distance 20 yds. from traps).

The remaining four birds to be double rises, with a slight pause between 1st and 2nd traps being pulled. Each kill to count 1 point. Distance 15 yards.

Entrance fee for each team 2s. 6d.

2. Another single rise-trap could be provided for sweepstakes, which would be limited to quarter of an hour. No one to shoot at more than one set of five birds during that time.

Entrance fee to be arranged on the ground—1d. fo each bird.

N.B. No gun larger than a 12 bore to be used—charges not to exceed 1.1/8 of shot.

Songs of the Gunroom.

Here are three 'fore-bitters' and one little stave,—the latter concerning the characteristics of the snottie of to-day, and him of a hundred years ago. They are reminiscences of happy gunroom days, and the swallowing of much hot grog. By chance they do not happen to be published in the Navy Song Book.

The Merman.

T'was a fine bright morning in Januaree
Away in the Southern Seas,
Our ship was at anchor on a coral reef
Awaiting for a breeze,
The Captain he was down below,
The crew were lying abōūt,
When from over the bows we heard a splash
And then a thundering shout.

Blow ye winds, heave ho!
Blow ye winds, heave ho!
Clear away the morning dew,
And blow ye winds, heave ho!

Man overboard did the watch cry out,
And forward we all ran,
When we found hanging on to the best bower chain
A jolly old bluff Merman,
His eyes were red, his hair was green,
His mouth was as big as thrēē,
And his jolly great tail that he sat upon,
Was awaggling down in the sea.

What ho! cried our mate as bold as brass.
What ho! messmate said he,
I must speak to your noble Capitaine
I've a favour to ask of he,
Then the Captain bold he came on deck,
He looked in the waters blūe.
Come, tell me my man as fast as you can,
What's the favour I can do for you.

Oh! you've dropped your anchor afore my house
You've blocked up my only door.
And my wife can't get out for to roam about,
Nor my chicks one, two, three, four,

It would break your heart to hear them groan,
And the row they have had with mē,
For I've been out all night at a small tea fight,
At the bottom of the deep blue sea.

Said the Captain the anchor shall be hove at once,
And your wife and your chicks set free,
But I never saw a 'tail' from a sprat to a whale,
Before that conld speak to me.
Your figure head is like a sailor bold,
You speak like an Englishmān,
But where did you get that wonderful tail,
Come, tell me that if you can ?

Oh ! a long time ago from the ship "Hero"
I fell overboard in a gale,
And I found down below where the seaweeds grow
A lovely girl with a tail.
She saved my life so I made her my wife,
And my legs changed instantlēē,
Now I am marrīaid to a mermiaid,
At the bottom of the deep blue sea.

The Admiral's Broom.

Van Tromp was an Admiral brave and bold,
The Dutchman's pride was he,
And he cried "I'll reign on the rolling main,
As I do on the Zuyder Zee,
As I do on the Zuyder Zee!"
And as he paced his quarter deck,
And looked o'er the misty tide,
He saw old England like a speck
And he shook his fist and cried,
He shook his fist and cried :—
"I've a Broom at the mast !" said he,
"For the Broom is a sign for me,
That the world may know wherever I go,
I sweep the mighty sea,
I've a Broom at the mast !" said he,
"For a Broom is the sign for me,
That wherever I go, the world may know,
I sweep the mighty sea."

Now Blake was an Admiral true as gold,
And he walk'd by the English sea ;
And when he was told of that Dutchman bold.
A merry laugh laugh'd he,
A merry laugh laugh'd he,
And he cried, "Ho ! Ho ! and away we'll go,
Come aboard, merry men, with me ;
And we'll drive this Dutchman down below,
To the bottom of his Zuyder Zee,
To the bottom of his Zuyder Zee."
"His Broom may be trim and gay,
But we'll haul it down to-day ;
When he says he'll sweep the mighty deep,
'Tis a game that two can play !
His Broom may be trim and gay,
But we'll haul it down to-day ;
When he says he'll sweep the mighty deep,
'Tis a game that two can play !"

Then he cried, "Come here, you Dutchman queer,
To-day you must fight with me,
For while I ride the rolling tide,
I'll be second to none," said he,
"I'll be second to none," said he,
So he blazed away at the Dutchman gay,
Till he made Mynheer to fall,
Then he hoisted a whip to the mast of his ship
And he cried to his merry men all,
He cried to his merry men all :—
"I've a whip at the fore" said he,
"For a whip is the sign for me,
That the world may know wherever we go,
We ride and rule the sea.
I've a whip at the fore," said he,
"For a whip is the sign for me,
That wherever we go, the world may know
We ride and rule the sea.!"

Tom Hardy.

He was the village pride, I know,
A curly headed lad.
A merry tongue, a roguish eye,
And a gay light laugh he had.
He was his mother's only child,
And proudly through the street,
He marched beside her to the bay,
To join the Channel Fleet.

From many a casement on the way,
Peep'd many a bright-eyed lass,
With beaming eye and beating heart,
To see the sailor pass.
But one kind heart, she could not look,
She could not speak that day
When in the Agamemnon
Tom Hardy sailed away.

To smile away his mother's grief,
He told with jovial voice,
Of coming back with medals fine,
And marrying his choice ;
And as he spoke a shining lock
Of sunny hair he press'd,
That underneath his flannel blue
Lay heaving on his breast.

No braver heart to battle went
No kinder one I know,
With constancy to meet a friend,
With courage meet a foe.
Aye ! true and faithful was the heart
That trod the deck that day,
When in the Agamemnon
Tom Hardy sailed away.

'Ere many days upon the foe
They bore with pennon proud,
And round the lad the death-fire flashed
From battle's thunder cloud.
Just as the foe their colours struck,
Down on the deck he fell
While all the cry was 'victory'!
The cry that boom'd his knell.

A sunbeam seem'd to flood his face,
To light him to his rest,
As underneath his flannel blue,
The shining curl he pressed.
One dream of love !—O, spirit true,
That wing'd its flight that day,
When in the Agamemnon
Tom Hardy sailed away.

The Fine Old English Midshipman.

I'll sing you a bran' new song, made by a naval swell,
And though the subject's pretty old, it'll go down very well,
If for a few brief moments I might be allowed to dwell,
On the past and present midshipmen ; and now to you I'll tell :—
Of the fine old English midshipmen,
All of the olden time.

In dismal hole, and cockpit dark, my ancient did exist
In atmosphere about as thick as any Scottish mist ;
And oft to lay the cloth with his own hands he would assist,
And any quarrels with his pals he'd settle with his fists ;—
Would this fine old English midshipman
All of the olden time.

But when the fight was over, with momentary will,
They'd down below together, and mop off their half gill ;
And call for salt pork and biscuit, and have a friendly fill,
Thus proving to each other that neither bore ill will ;
Would these fine old English midshipmen,
All of the olden time.

Promotion proving very slack, his prospects oft would mar,
To grant him ten pound quarter bill, he had no kind papa ;
And so he'd dwindle out of sight, just after the long war,
And lost to sight of friends so dear; of memory afar ;
Would this fine old English midshipman,
All of the olden time.

Another race has now sprung up, those of the present day,
Off well filled chests and scented soap they hold their sovereign sway ;
And issue forth at eight o'clock so brilliant and so gay,
And then to 'Number One' they'll go, and leave on shore they'll pray ;
Will these fine young English midshipmen,
All of the present time.

Perhaps 'tis Yes !—Perhaps 'tis No !—if Yes, then down they go,
And, "Sentry ! pass the word for Snooks and send him here below."
And then they'll dress themselves so smart, as if for any show ;
Ashore they go, and leave poor Snooks—their gear away to stow ;
Will these fine young English midshipmen,
All of the present time.

At dinner too, off silver spoons and patent plate they dine,
And loudly call the attending steward to furnish them with wine ;
But if their wine bills should be stopped ; they nosily repine,
And sling their caps across the mess for which they're sixpence fined,
Will these fine young English midshipmen,
All of the present time.

They don't like watch, they don't like school, or gun or cutlass drill,
Off lockers all day long, they cork it out the time away to kill,
But try them once in action, and they'll give the foe their fill,
So let's confess the last are best, and stick up for them still,
For these fine young English midshipmen,
All of the present time.

(Second Edition).

And last of all another breed, who wait for coming fame ;
They're Engineers and Specialists, and Snotties all the same,
Tho' with their jobs so varied, they're 'crabbies' but in name,
And if they find their work too much, it's not for us to blame
These fine young English midshipmen,
All of a future time.

(M).

Salving the 12 inch Guns and Mountings of H.M.S. "Montagu," Aug. to Oct. 1906.

THIS clever account describing the salving of the "Montagu's" guns has been voluntarily supplied to me by an old messmate, Captain E. W. Ewart, who commanded the "Doris" during the operations.

I am very grateful, for it is undoubtedly the most interesting 'Whisper' to be found in the book; but in spite of such, its reading will never lesson the regret felt throughout the Navy for the one man who suffered.—A victim of unexpected circumstances; else this story would never have been told.

Introductory:—The work of attempting to salve the 12-inch guns, as well as certain other parts of the stores and fittings, of H.M.S. "Montagu," was entrusted by the Admiralty to the Liverpool Salvage Association; the following brief description of the operations will be confined almost entirely to the salvage of the heavy guns, which was successfully accomplished in the comparatively short time of five weeks, particularly observing that there were several unavoidable delays due to bad weather. While the work of getting the guns out was proceeding, many other fittings of the ship were removed to Pembroke dockyard.

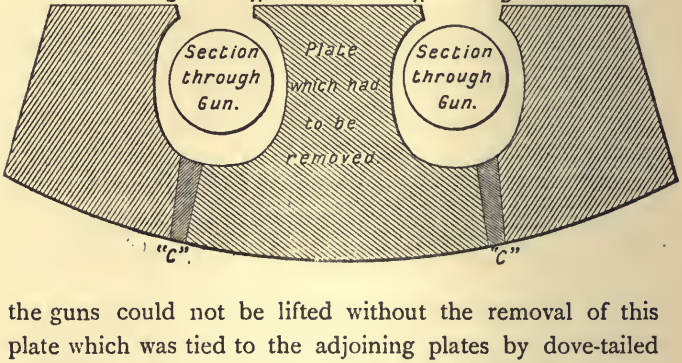
On the evening of the 26th August, the salvage steamer "Ranger" arrived at Lundy Island, having on

board Captain F. W. Young—one of the principal wreck masters of the Association, and who was to be in charge of the operations. On the 27th August the salvage vessel "Plover" arrived from Pembroke, towing a Government lighter containing two pairs of sheer legs, two boilers, two steam winches, one air compressor, coils of wire and manila ropes, blocks, tackles, etc. The working staff of Captain Young consisted of his principal assistant (Lieut. Williams, R.N.R.), 34 riggers, 3 divers, 3 carpenters, 2 engineers and 4 firemen, besides 9 shipwrights lent from Pembroke Dockyard.

Preliminary work:—On the 28th August the lighter was towed round from the eastern anchorage and was placed alongside the "Montagu" on her starboard—or inshore—side. (Captain Young had chartered a small tug for towing work and for taking parties to the "Montagu"). Making use of the "Montagu's" starboard fore derrick, and with the assistance of manual labour from the ship's company of H. M. Ship "Doris," the boilers and winches were hoisted inboard, and were secured against the danger of being moved by heavy seas from the westward. The air-compressor, for working pneumatic tools for drilling and cutting, was also installed on board.

Clearing away of fore turret:—On the 29th August, steam in the boilers was raised for the first time, and the pneumatic drills and chisels were put in operation for removing the top plates of the turret. Owing to the shape of the plates of armour, between the guns, on the front face of

turret (see the corners at 'A' 'A' and 'B' 'B' in the sketch),



the guns could not be lifted without the removal of this plate which was tied to the adjoining plates by dove-tailed taper keys ('C' 'C' in the sketch). The only way to remove these keys was to force them up from below, and this necessitated cutting away the foundation plate on which the armour rested. This was carried out, and, by means of hydraulic jacks, the keys were forced up and removed. The removal of the armour plate took a week to accomplish.

Training the Turret :—Originally, Captain Young intended to lift the guns out of the turret while it was trained fore and aft, place each gun on chocks on top of the turret, parbuckle each gun down on an inclined plane to the ship's side, and then pick it up with sheers stepped fore and aft. This scheme however was modified, and it was decided to attempt to train the turret on to the starboard beam, so that the sheers on the ship's side would be stepped across the muzzles of the guns ; each gun being first lifted out of the turret by another pair of sheers stepped across the ship, transported down an inclined plane, muzzle foremost, until far

enough outboard, and then lifted into the lighter by the ship's-side sheers.

Certain difficulties presented themselves in training the turret.—The ordinary training gear could not be used; the ship had a list of 5° to port; rollers and roller paths were coated with rust; the rotating ammunition trunk has been wedged and cemented at the junction with the fixed trunk, to make it watertight during the earlier operations; most of the brass segments of the training-rack had been removed, but an odd segment remained here and there, including the two in which the teeth were in gear with the pinions of the turning spindles.

To meet these difficulties the following steps were adopted.—As the spindles were well rusted up, and would cause resistance, the segments of the rack were removed. Both rollers and roller paths were well coated with tallow, the hydraulic locking bolt was removed, and the hand securing bolts were withdrawn. A 3½ in. wire lashing was then passed round the muzzles of the guns, and a wooden supporting strut was fixed between the muzzles (to work against the action of the lashing). To the lashing of 6 in. hawser, a manila was secured, which was taken to the small tug. A 4½ in. wire was secured to the guns close to the embrasures, passed aft round the turret, a tackle clapped on, and the fall of the tackle taken to one of the steam winches. The tug then went ahead, and the winch was hove on at the same time. The turret started, but brought up after moving nine inches; a jerk on the towing rope caused the latter to part; the towing rope was then converted into a tackle, and the turret was successsfully trained after one or two fleets of the tackles.

Sheer Legs and Purchases:—The sheer legs consisted of baulks of timber (pitch pine) nominally 20 in. square in section, but averaging throughout their length somewhat less (18½ in. to 19 in.). The foot of each leg was cut to the required slant. The centre pair of sheers were 60 ft. in length, and the ship's side pair 50 ft. Each leg was recessed at the head at the proper angle to receive its partner, the average depth of the recesses bring 3½ in.; at the recesses both pairs of sheer legs were bolted together by a mild steel bolt 3 in. in diameter, and were also lashed here with wire, the bolt being afterwards slacked back to allow the wire to take the strain.

The sheer legs were floated alongside and were hoisted inboard by derricks especially rigged, the heads of the centre sheers being forward, and their heels lashed in position abreast of the foremost edge of the glacis of the turret; the heads of these sheers were then lifted on to the cable holders, and were secured together by the tie bolt already mentioned, and by nineteen turns of 3½ in. wire. The main purchase of these sheers was four-fold, and 10 in. manila rope rove; the upper block of this purchase was secured at the sheer heads with a 4½ in. wire lashing. Fifteen feet from the head of the sheers, single 4½ in. wire belly guys were secured; these belly guys passed down over the bows, up through the hawse pipe, and were made fast to the cable bitts; a fore guy tackle was secured forward in the ship, and the sheers were raised by a topping lift taken to the foremast of the ship.

The ship's-side sheer legs, after being hoisted on-board, were laid across the turret and secured together

there.—These also were fitted with belly guys, a back-guy purchase to the port side of the ship, and a guy of a single $4\frac{1}{2}$ in. wire led to the shore for topping up. The heels of these sheers were let into the deck, and angle irons were bolted round the sides of each leg—the heels of the sheers stepped athwartships, and were not let into the deck on account of the necessity of moving them later for plumbing the second gun, but angle irons were bolted round them to form steps. The main purchases of the outer sheers were two in number,—one of $3\frac{1}{2}$ in. wire, and one of $4\frac{1}{2}$ in. wire, both three-fold.

The ship's-side sheers were first erected ; they were given a cant of 5° outboard, which gave the heads of the sheers an outward plumb of about four feet. The centre sheers had a cant of about 10° aft.

The fall of the main purchase of the centre sheers led through a block close to the heel of the starboard leg, a three-fold $4\frac{1}{2}$ in. manila tackle was clapped on to the fall, and the tackle taken to a steam winch. The leading block at the heel of the sheers was lashed to one of the deck beams underneath ; a square hole was cut through the deck planking and steel plating, thus laying bare the deck beam. The deck underneath was not shored up at all (except by its ordinary stanchions, which were particularly strong under the muzzles of the 12 in. guns), but the downward thrust of the sheer leg was partly compensated for by the upward pull of the leading block on the deck beam.

The fall of the purchase of the ship's-side sheers was similarly led through a block secured to a deck beam. The

second purchase on this pair of sheers was for topping the breech of the gun when pointing the latter into the hatch of the lighter, the hatch being shorter than the gun, and also having a permanent beam across it.

Construction of the Inclined Plane :—To transport the gun from the top of the turret until it could be lifted by the second pairs of sheers, an inclined plane had to be built from the ship's side ; this consisted of baulks of timber well supported underneath, bolted together and secured to the top of the turret. For the first gun the incline was $1\frac{1}{2}$ in. to the foot, but this was afterwards increased for the other guns to $3\frac{3}{4}$ in. to the foot. Chocks cut to fit the gun were made, and were laid on the inclined plane.

Hoisting out the First Gun :—The keys holding the gun in its cradle were first withdrawn ; the gun was then slung for the main purchase about three feet in rear of its centre of gravity (it was impossible to sling the gun, while in its cradle, exactly at its centre of gravity, so the muzzle was lifted at the same time as the breech end, by a purchase from the outer sheers). When the main purchase was hove on, the gun did not at first lift (the 10 in. manila fall stretched to 8 in.), so a 30-ton jack was used to start it. When the holding rings on the gun were about to come clear of the corresponding grooves in the cradles, the muzzle purchase was hove on ; the gun then came slightly to the rear under the standing part of the cover of the hood, and had to be prized forward ; also an outhaul, led to the shore, was made use of. The gun came up very slowly, and several fleets of the tackle on the purchase fall had to be made.

When the gun was above the turret, the rising tide and swell setting in, necessitated the suspension of operations for the day, so the gun was shored and chocked up, and the tackles left taut.

The next day the weather was too bad for work, and at high water seas were breaking over the ship, but the salvage gear stood nevertheless. The following day work was resumed. The chase of the gun was lowered on to the chocks on the inclined plane, and the 3½ in. wire purchase of the outer sheers was then shifted from the muzzle to the centre of gravity of the gun, also two downhaul tackles were secured from the same place to the ship's side. (For the time being the 4½ in. purchase of the outer sheers was idle). Preventers, to check too rapid sliding, were led to the gun from the opposite side of the deck.

The strain was now taken on the purchase of the centre sheers, and the shores under the breech end were removed; the downhaul tackles were hove on, and the gun commenced to slide very sluggishly. When the main purchase would no longer lighten the gun on the incline, it was detached; the 4½ in. purchase from the outer sheers was then hooked on to the strop, in rear of the centre of gravity, from which the main purchase had just been detached, and both outer purchases were hove taut. This had the effect of canting the outer sheers from 5° outboard to 5° inboard, tautening up the sheer-head guy to the rocks ashore, and slacking up the belly guys and sheer-head topping lift to the ship. Thus the gun was skidded slowly down the inclined plane until its centre of gravity, and the 3½ in. wire purchase,

about plumbed the fork of the sheers, which were then canted inboard four to five feet. The downhaul tackles were then removed, and the two wire purchases on the outer sheers were hove on until the weight of the gun was off the inclined plane. A wire outhaul was now attached to the gun, led through a block on shore, and taken to the foremost winch onboard "Montagu"; by means of this outhaul, the sheers—with the weight of the gun on them—had to be canted outboard, and some anxiety was felt as this was being done. However the tackle to the sheer-heads and the belly guys (from the port side of the ship) were kept taut, and the gun was eased over gradually by the preventer ropes previously mentioned.

When the gun was sufficiently far outboard, the preventer ropes were cast off, and the gun was slewed with the muzzle aft, the breech end being topped (by the 4½ in. wire purchase), to point the muzzle into the hold of the lighter; then, by working two purchases alternately, and with the assistance of some side tackles, and by moving the lighter, the gun was gradually hove under the fixed beam across the hold of the lighter and placed on chocks of timber on the floor. As will be observed, an almost total absence of swell was necessary for safely placing the gun in a lighter fitted with so small a hatch with a fixed beam across it; but no more suitable lighter could be obtained at the time by the Salvage Association.

The first gun was placed in the lighter at 3 p.m. on the 8th September, the first salvage vessel having arrived at Lundy Island on the evening of the 26th August.

The floor of the lighter was fitted to take two guns, but Captain Young decided not to risk the loss of the first gun by waiting for the second, so the lighter was trimmed by an anchor, some chain cable and baulks of timber, and was towed to Pembroke on the 9th September.

The Second Gun of the Fore Turret:—The centre (60 ft.) sheers were now fleeted aft, as they stood, for the second gun. The port leg was moved 20 in. to 22 in, i.e. : all it could go, as it then came up against the turret ; the starboard leg was fleeted aft 4ft. 9 inches. The inclined plane was somewhat modified, being given a greater inclination ($3\frac{3}{4}$ in. to the foot). The use of the two wire purchases on the outer sheers was reversed, the $3\frac{1}{2}$ in. being used for topping, and the $4\frac{1}{2}$ in. for lifting. With the increased slope of the inclined plane, this gun went down freely, being restrained by the preventer ropes ; it was ready for placing in the lighter by 5 p.m. on the 10th September, but the lighter did not return from Pembroke until 2 a.m. on the 11th ; at daylight the second gun was lowered into it—under 16 days having elapsed since the arrival of the salvage vessel "Ranger."

Salving the Fore Turret Mountings, etc. :— Between the 11th and 23rd September the work of salving the gun-mountings of the four turret was successfully accomplished, as also the contents of the after warhead magazine of the ship, and her starboard propeller ; the last was severed from its shaft by a charge of 18 lbs of gelignite, a lighter pinned down to it at low water—with rise of tide the lighter was transported under the sheers forward, and the propeller lifted and placed in the lighter. Some parts of the port

propeller were picked up by divers from a rock off the port quarter of the "Montagu," and her rudder was also found here, but was not salved. A large quantity of small fittings of the ship were also removed during this period.

Salving of the After Turret Guns:—The after turret was cleared away in a manner similar to that already described for the fore turret, but the tug was not used for training. For this purpose, two tackles were secured across the deck to the guns, and were hove taut by the winches; they were then left until covered by the rising tide, when the shrinkage thus caused overcame the initial resistance to training, and the turret was found trained through 4° to 5°; one of the steam winches did the remainder of the training.

On the 24th September, the work of unrigging the sheers on the forecastle was commenced; the sheer legs were placed overboard and were towed aft. The derricks forward were unrigged, the gear transported aft, and the winch which had been on the forecastle was moved into the starboard waist (N.B. The quarterdeck was always under water at high tide).

On 25th September, the 50 ft. sheer legs were hoisted on to the quarterdeck, with their upper ends on the turret, in which position they were rigged as before. In getting in the 60 ft. sheers, the rise of the tide was made use of, one leg being actually floated onboard. By the morning of the 28th September, the sheers were erected. (The weather had remained most favourable, but it must be remembered that all gear liable to be washed away had to be removed before

each rise of tide, and replaced each time at low tide, before work could be resumed at the point it had previously stopped.)

On the afternoon of the 28th, the first of the after 12 in. guns were lifted on to chocks on top of the turret, but the lighter for its reception did not arrive from Pembroke until the 29th (Captain Young had been endeavouring to procure a more suitable lighter than the one which had been used for the foremost guns).

On the 29th, the first gun of the after turret was hoisted out in the manner described for the foremost guns. Another lighter was now available for the last gun. At 7 a.m. on the 30th September the work of lifting this gun was commenced, and by 11.30 a.m. the gun was out, in the extraordinary short time of 4½ hours. On the 1st October this last gun was towed to Pembroke, and almost immediately the settled weather broke up; much damage was done on board the "Montagu," and salvage operations were at a standstill for some days. On the 10th October the ship become accessible again, but although the sheers were still standing, the boilers for working the winches had suffered considerably, all connections being broken. Instructions had been received from the Admiralty to destroy the submerged torpedo tubes, so they were blown up on this day with charges of gelignite.

The Salvage Association now decided that it was too late in the year to make it worth their while to fit up the boilers again, particularly as the main object of their work—the salvage of the 12 in. guns—had been successfully

accomplished; so, on the 11th October, a party from H.M. Ship "Doris" hoisted out the boilers and winches; the cradles of the after turret guns being also hoisted out by hand, after which all salvage operations were abandoned for the year.

Destroyers.

THE advent of the Destroyer was after my junior time, and I have in consequence asked Lieutenants Claude Cumberledge and Lionel Preston to kindly help my book in this particular and important branch of the Service. The following notes emanate from their pens and experience, and I feel confident that they will materially assist a new hand coming to the job.

There is no denying the fact that at times our Destroyer Service has been criticised to its detriment, in comparison with that of certain foreign fleets ; but, like much other paper fault finding with the Navy, it springs mostly from irresponsible sources, and consequently little notice is taken of it.

It may be that a percentage of destroyer officers of some nation of which I am thinking, are more highly specialized in this particular duty ; but to take a sporting simile.—They may be better *riders* than our fellows—although I doubt it—but the men from Britain are by far the finer *horsemen*.—By which I mean the former are carefully taught by rule of thumb and more on the principals of the *haute ècole*—riding solely on the curb, and to them untoward eventualities may come amiss ; but the latter sit down in the saddle, swing along with a free rein and light heart, and go laughing through the smoke.—To them no fence is too big to turn away from.

For example.—Let me call to mind the goodly sight of those two destroyers "Fame" and "Whiting" slipping through the black rushing waters of the Peiho at the opening of that furious and distracting midnight bombardment of the Taku forts; bound to attack and capture the Chinese destroyers and arsenal; knowing naught of what was ahead of them, and caring less.

Or again, where is the nation who breeds the men, who for humanity's sake, have such confidence in their skill, that they will voluntarily imperil all personal position and past service, besides risking their frail craft—long as a frigate, and whose fragile sides are so thin that a boathook head will dent them—to perform some deed of sea rescue, most dangerous to even a stout handy lifeboat tug built for the purpose?—Witness the incident in the late Hongkong typhoon; or the saving of that Italian sailing vessel driving to certain destruction on a lee shore off Capri in the Bay of Naples, till—none too early—succour came from the destroyer "Albatross."—Her work was not completed (with the coaster safe in tow), till the roar of the breakers could be heard to leeward in the teeth of the howling gale.

No!—I venture to state that the dear old British Public can rest assured that their destroyer fleet will be all there when the flag falls, and that they will 'get the course' be the obstacles what they may.

Here are the Notes:—

Before leaving harbour, secure everything for a gale of wind.

Special duty-men should always be at the telegraphs, as they get to know the Captain's ways.

Get into the habit of watching which way your telegraphs are put—also helm.

If the engines are moved the reverse way to where the telegraphs are put, don't repeat the order, but stop at once, and then telegraph again.

Make your coxswain and telegraph men repeat your orders.

The sub-lieutenant should attend on the bridge as soon as his presence is no longer required aft, to pick up the idiosyncrasies and methods of handling a boat, also to take mental notes on the appearance of the land, coast lights, etc.

The best arrangement is to have the four harbour quartermasters told off in four watches at sea as bridge messengers. All the remaining seamen in rotation do two hours at the wheel, except the Captain's servant, lamp-trimmer, and lower deck sweeper, who divide the dog-watches and the first two hours in the morning. Thus, all seamen get practice at the wheel except the quartermasters, who only remain as such for a definite period, changing rounds once a quarter.—Two hours is quite long enough at one time for a man to watch a destroyer's compass card, and by this means you have the use of all the seamen, except the four quartermasters and three daymen, when not actually at the wheel, for small jobs. As a matter of fact the hands are told off in port and starboard watches, but the case of a man of the

starboard watch, say in his rotation of trick, keeping a port watch trick does not signify ; as if it is a matter of requiring only one watch to do a certain job, it would in all probability be as easy for two men to do it as three, otherwise both watches would be used.

The stokers are divided into watches according to the numbers of boilers alight, as a rule they are in three watches ; but it is generally found necessary to alter them to two watches when all boilers are going.

Signalmen should be in watch and watch night and day, though not required to be constantly on the bridge except in manœuvres, when the leading signalman should read the signals and the second hand bend on the flags. When manœuvring, it is a good plan to tell off one or two seamen to assist bending on the flags under the signal officer.

Destroyers are good sea boats so long as they are not forced,—dead slow, head to wind, or a point off, is quite comfortable, and it is easy to keep there. Stern, or quarter, to wind and sea, is difficult to maintain.

When at sea, have the men away in boats in life belts.

During typhoons in the China Seas, a plan used by small steamers, is to unshackle the cable from the anchor, veer it to five or six shackles and ride by it.—It might help a destroyer on such occasions.

In thick weather, when risks are necessary to make land (with outlying shoals), they may be minimised by lower-

ing the anchor down with a shackle of chain and going dead slow. The anchor will take the shoal before your bow and bring you up.

Recollect that the weakest part in most destroyers is between the funnels, and punching at high speed is apt to show itself there. Stern rivets are also known to shake out.

Don't take in wet coal—regulations are strict on this matter,—for a fire in the bunkers in bad weather is most unpleasant to say the least of it.—See the coal is good.

Always make it a point to see your torpedoes tested personally.

Don't fire them in water over twenty fathoms.

Get a sandy bottom if possible.

When testing at sea and rolling, going slow head to swell reduces the chance of a bent tail, and a side well padded with fenders is indispensible.

If you part the bower cable, a good old plan of recovery is to tow the kedge to and fro across the line of cable.

Should there be a mishap of any sort, write a 'circumstantial letter' with a full report at once.

Plates and frames are scraped and painted once a year, and above all try and work their inspection in your annual refit. A month early or late will not get you disliked, but an

argument that they are now due, brought up shortly after leaving your dockyard, and accompanied by "They've all got a down on me" expression, has nearly led to appointment to a larger ship before to-day.

Running the coal down before going into dockyard hands is a good general rule.

Stories were once abroad that destroyers are very apt to drag their anchors; if so, back with the kedge, or drop another anchor under foot and sleep sounder.

Don't forget to check your steering compass by the standard before making a long course.

Keep the deviation table in the chart drawer, *and use it.*

Instead of the '4 pointer,' 26° and 45° on the bow, gives the distance you will pass off just as accurately.

Bridge and quarter lifebuoys should be fitted with a lanyard from the calcium light to the rail, so that it will part the strip when thrown.

As electric navigation lights are not generally service fittings, the oil ones should be kept trimmed in the event of the former failing.

Lay in two days fresh provisions before a sea trip; and if abroad, don't forget the Bill of Health.

On approaching a port at night, it is often difficult to make out entrance and leading lights if you do not know the

place. Don't stay hanging about outside, but get close; remember the nearer you get, the clearer the lights become, and that you draw less water than the average small coaster.

If staying over night in port, let her have plenty of chain, bowse to and go astern with the engines a little; don't fiddle about with a shackle and a half, give her six and go ashore to dinner in comfort.

Anchoring in a port where you have to haul your stern into a wall, let go both anchors, one just before the other, with stern way, far enough out to have six on each. Secure aft with all your hawsers, private and service, and you then hope to be a fixture, blow it never so hard. It is quite easy to weigh both anchors together on leaving.

The best anchorage in a port can generally be selected by dropping yours close to a local sailing craft's anchors. (The ubiquitous Norwegian barque draws plenty of water, and the skipper always being a good seaman plays for safety.)

When backing stern into a wall, steer with your after wheel, or make the officer aft use the Villiers lamp, red and green.

If you think that you have fouled a steamer's cable, don't heave round, but steam over to where you gather your anchors are, and then weigh them.

Going into a tight fitting berth, or alongside a pocket like the commercial mole at Gibraltar, with the wind on the off bow, beam, or quarter; it is well to keep your stern up to

windward and let the breeze blow the after part in. You can check it ftom swinging in too fast, by going astern with the screw nearest the wall.—This also applies in a tideway.

In handling your boat, we repeat the advice of Captain Walter Cowan :—"Never let your boat go faster than your brain."

NOTE.—Ed. As an instance of this excellent advice, I might just quote the marvellous performance of that destroyer, which at high speed went clean over a heavily laden Thames barge (with gunwale awash), without death to anyone, or destruction to either vessel.—A slow working brain guided the former's course; and it is related, that its possessor on the bounding bridge jumped clean through the rent in the barge's mainsail like a circus girl through a hoop.—The destroyer's bottom later was likened unto a switchback.

A dash into a basin at 20 knots, even in the strongest of winds and cross tides, is unnecessary. Should it come off, there is only a matey or two to see; and if it does not, there is a stone wall and a Court of Enquiry ahead.

To go fast is often necessary, but to cut things so fine that a momentary hang of one engine means a crumpled bow, could not appeal to our seamen forefathers.

When going alongside another boat either at sea, or riding at anchor, be careful not to bring the strain on the bow hawser until your stern is well in and secured, as otherwise you only drag her bow towards yours.

To slip from a bouy bows up a river and a sluicing ebb, go ahead with one screw, slip forward, and let the tide catch your bow and turn you, before slipping aft.

In destroyers, calls on consuls, etc., are as necessary as in any other ship.

Let the engineer officer know in good time all that affects his fires—coal can thus be economised.

Don't bully your capstan engine—there are sundry occasions when a touch of the screws can assist it.

Clawing off a wall, or from another boat, don't be afraid to use a spring.

A cork fender, ready to drop over the bow or stern when going into a tight place, commends itself.

Don't over-run a buoy on the tideward side, or you may find it under your bottom and eventually round your screws.

A fender over the bow is a good platform from which a man can jump on to a buoy.

Refrain from towing your dinghy if you can avoid it; but if it is necessary, tow her alongside.—Boats towing astern are apt to be forgotten.

When being taken in tow for a sea trip to save coal, etc., stick out for two whole wire hawsers shackled together. Shackle your end to your own cable double-bitted, with a few links outside the hawse-pipe, and set up on the capstan. Above all, put on a hemp deck stopper taut before the bitts.

As an instance.—Four destroyers started in tow of a cruiser squadron from Phalerum Bay to Cyprus,they were towed at 15 knots in heavy weather. The one boat with two hawsers and hemp deck stopper did not part, and had by far the more comfortable time, besides having no forecastle defects on arrival.

To take a broken-down ship, or ship in distress, in tow in heavy weather :—

If there is no time to be lost on account of approaching darkness, or of proximity to dangers, do not attempt to drift a line secured to a buoy across her bows—the probability being that the ship is too high out of water to enable the crew to get hold of it without wasting considerable time.

Have a couple or more of long heavy lines secured together, led along outside the rails, and a smart hand holding a coil of the line each end of the ship.

Get astern of her, and steam past her to windward, as close as prudent, at about 8 knots or more, according to the state of the sea. Should the man at the fore end miss his heave, the man aft has a second shot, but the probability is that being so close the first man would not miss.

See that the line is never allowed to tauten once they have it, and directly your ship is clear and ahead, go astern to prevent any strain being put on the line. You would most probably not have been able to arrange which ship should provide the towing hawser. In most cases the craft to

be towed would try and do so, as the average crew of a merchant ship would not have the strength to haul up a destroyer's wire or cable, whereas they usually have a first rate manila or hemp hawser of their own. In any case you would see immediately if they had bent the heaving line on to their hawser, and a wave of the hand from them would be the signal for you to haul it in; put a bowline in it, and secure it to the slip of the towing strop if you have one, if not, pass it round the after bandstand and secure it so. Give them plenty of time to secure their end before going ahead, and, when you do so, go dead slow and keep on stopping until straightened up and all danger of a sudden jerk is gone. Even then, go dead slow until well clear of all dangers.

Another method to get a line onboard a craft which has, like the above, been proved to be safe and effective, is, instead of steaming past her, to run down bows on and dead slow with the wind aft. You have thus complete control over your own ship, and in consequence you can get sufficiently close and to windward of the craft to be towed, to enable your heaving line to be thrown onboard of her.—Also, you have to hand the use of your capstan, if required.

This method of bringing the wind aft, has been proved to be most successful for going alongside a collier, which if light, and it is blowing hard, will be sheering about at her anchor. Owing to this sheering, it would be a dangerous job to attempt to come up astern to go alongside—see that you catch her quick with the grass line from aft once you are abreast.

Lying alongside a collier 'bow and stern' also keeps the coal dust forward, and only dirties half the ship.

When coaling from a collier with a bit of a roll on, use only hemp and grass lines.—Wires are too rigid and carry away at once.

A festoon of old junk (which most colliers possess) acts as a splendid fender on the collier's side.

Cylindrical fenders about 18 in. long and 8 in. diameter, made of old grass line covered with canvas, with a white rope lanyard, should be made onboard; they roll round when in contact with a wall or ship, and don't rub off paint.

When going alongside a collier, go slow and have your anchor on the bill-board. If you have not had time to cat it, lower it down beneath the keel.

If you have time to hoist out your boats previous to going alongside for coaling, make them fast if possible to another ship; but if you must moor them off, don't trust to one boat's anchor holding a whaler and two or three berthon boats. Back it up with a few firebars or a sinker if you own one; and then the coaling record will not be spoilt by having to send after them when the breeze springs up and wafts them away to leeward.

When at sea, a destroyer's anchors should be frapped and lashed one to the other across the deck.

NOTE :—Ed. I recollect the "Taku" (the Chinese vessel captured in the Peiho in 1900) nearly having a hole knocked in her bottom by one of her anchors which broke adrift during the tail end of a typhoon when off Hongkong.

If a destroyer is detailed off at any time to run bum-boat for the fleet from an open roadstead, and nasty weather sets in; it is better for her to make fast astern of some broad beamed vessel for a lee, while the many boats come and go to her about their business.

Coaling.

Excuse no one. The leading signalman tends the hook, he can probably see any signals from his position.

Domestics keep up the supply of empties.

All seamen, and as many stokers as can be spared from stowing, go in the hold of the collier.

Small bags are much easier to work than large ones.

The coxswain tends the lizard, or running derrick guy whichever is used, assisted by the other signalman.

Gunnery.

The 'bread bag' target will be found useful for aiming tube, patching the hits with paste and white paper.—A boat manned with men in cork jackets is the quickest way of effecting repairs.

Keep a record of each man's hits.

If it will not be thought presumption to say so, all the care and trouble taken with aiming tube must have had an influence on the Mediterranean torpedo boat destroyer results (1906).

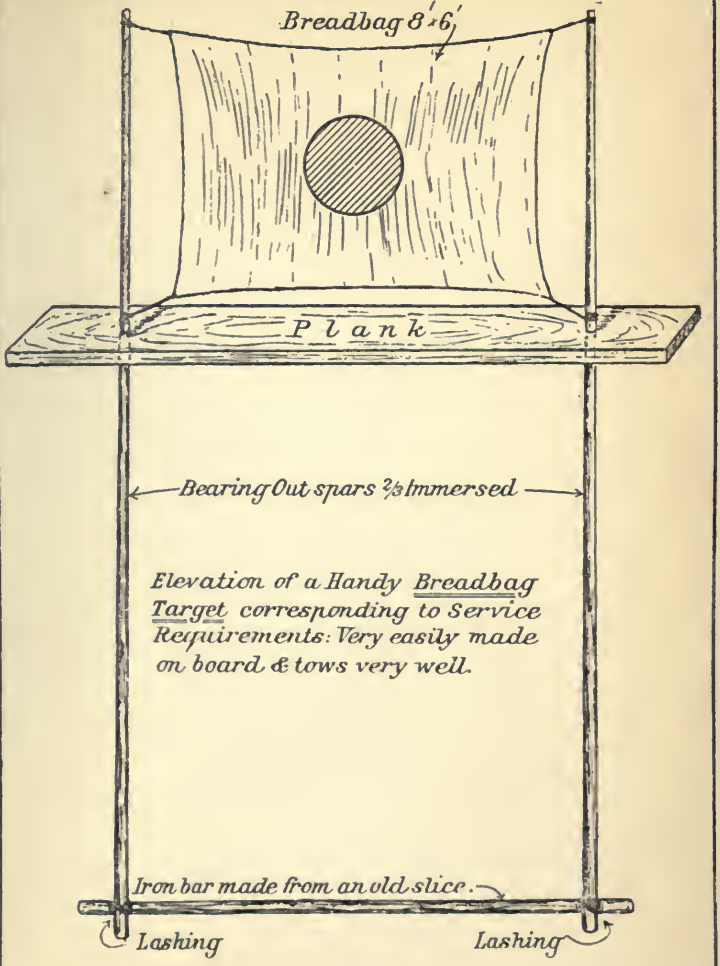
A rough idea of the scheme of one of the top scoring boats was as follows :—

Starting with a new ship's company, all seamen holding gunnery ratings or otherwise, fired three runs of ten rounds each, under competition conditions with the aiming tube. The eight with the best results repeated the dose, and so, by the elimination process, the most consistent shots were called gunlayers and given a 6 pr. each. On every occasion afterwards, buoys were laid down, and each gunlayer fired his ten rounds. A continued score was kept on the mess-deck which led to a fair amount of friendly rivalry.

The order of merit in the competition and in the total aiming tube scores were identical.

Whitewashing the bread bag target is a good plan to teach the gunlayer to quickly spot his shots, the whitewash flies from a hit.

When working targets for the gunnery school tenders with a torpedo boat destroyer ; for each line of targets, go at them stern to wind to repair, and drop them with sternway. —You will thus not foul the sea anchors. During the run, lie stern to wind, about two cables from your targets, you



Elevation of a Handy Breadbag Target corresponding to Service Requirements: Very easily made on board & tows very well.

will then be ready to go astern without occasion to slue. There is no objection to the one boat lying midway between the two set of targets.

To Lay Out a Service Target.

Rig target, and place it over one side of the engine-room hatches.

Fit a span of rope from the four corners with an eye in the centre.

Have about five fathoms more than the depth of water on your moorings.

Secure moorings to target with plenty of end, so that you will have something to catch hold of when casting them off after picking up target.

Coil the moorings down for running, one forward and one abaft the target.

If you like, there can also be a small buoy and buoy rope on the sinkers as well.

Get a little stern way on the ship, keeping her head on the course you wish to run on afterwards.

Drop foremost sinker, and just before the mooring gets taut, launch target over bodily—it will right itself immediately. Let it drift forward about 30 feet, then let go after sinker.

Half ahead one, slow astern the other. If she gives the slightest sign of forging ahead, increase to half astern the other ; she will now in most cases try to get stern way (one half ahead, one half astern) but *don't let her*. Go slow or even stop the astern moving propeller, but catch her from forging ahead again by going astern again on the inside propeller.—A destroyer can be turned round without forereaching five yards.

Don't forget the swing of your stern in going through narrow waters.

Keep the engines moving slow, as long as prudent, in picking up your buoys.—She will steer much better.

Put the engine-room telegraphs to slow astern a considerable distance from your bow buoy, then stop immediately the screws revolve.—You will thus know if they are going to hang up below, in sufficient time to act, so that you won't snub into the stern of the boat moored ahead of you.

Go well to windward of your bow buoy in a cross wind, and over-run it slightly about ten feet.

Only bother about your stern when the wind is aft, or on the quarters, so long as you are fast forward.

When going out of a berth stern first, twist her till the stern points clear; then go fast astern.—She will steer better.

In company, don't turn inside your next head. Try and keep exactly in her wake.

During a night attack, if you suddenly find yourself dangerously close alongside another boat going the same way, don't jamb your helms hard over with a view to opening, for if you do, your sterns will probably swing into each other. If you see the other boat has put his helm over to open, go full speed and throw your stern off him with same helm he is using.

A searchlight in your eye looks *much* closer than it really is. The height it looks above the water is the only thing to go on, in judging your distance.

Get in the habit of noting how ships look by night in passing, and of estimating your distance from them.

Remember that risks which are inevitable in war are criminal in peace manœuvres. Nevertheless, do not totally suppress your criminal instincts, or you will learn nothing. A 'hanger-back' is a byword and a reproach amongst the flotillas.

If possible, have everything ready for firing your torpedo before darkness sets in.

Don't tear the strip off the Holmes' light too early.

Preparing for a night attack, deadlights should be closed, and engine-room hatches covered or screened with deck cloths at sunset.

Join the Villiers lamps up electrically if you are using recognition signals—it is also useful in the chart-hood.

Never forget the courtesies of the sea; such as asking permission before crossing a senior officer's bows, answering a tramp's dip, sending your dinghy to lend a hand to another destroyer coming to her berth, etc., etc.

Gunner.

The gunner is the gunnery, torpedo, and cable officer, and bo'sun. He can also be made responsible for the mess-decks.

He should take every opportunity to pick up a general knowledge of navigation, and practise in taking bearings. He must get conversant with the signal book as far as simple manœuvres are concerned, in case he is suddenly called upon to execute a movement while on watch.

As regards his actual gunnery and torpedo duties, he must be well posted in the King's Regulations and memos.

Make him report the gun sights correct to the Captain each morning at 9 o'clock. Be particularly careful that they are kept in good order (night sights included), and also circuits—a tube should be fired at general quarters.

Remember to deliver up keys on docking, and recover them on coming out.

When hulked, the gunner should report to the Captain the arrangements for the stowage of rum.

It is a good thing to make him responsible for the cleanliness of all scuttles throughout the ship.

If the gunner is made answerable for the mess decks, he should see to the following points :—

(a). Regulate the slinging of clean hammocks fortnightly, or according to circumstances.

(b). No stokers to be allowed on mess decks in stokehole rig.

(c). Ditty boxes and hat cases clean.

(d). Cap boxes together, and not rusty.

(e). Boots together, and not mildewed.

(f). Towels dried in the morning, and stowed afterwards inside hats.

(g). Lockers open for rounds, white clothing on top.

The gunner should be on deck during clean guns, and details the bright-work stations for the same.

He will see life-buoys hung clear for throwing, one on each side of fore bridge, and one on each quarter, fitted with a calcium light with lanyard secured to rail to tear off strip. Remaining buoys as convenient round upper deck.

As cable officer, he is responsible that all gear, such as catting pendants, shackles, drum or wire, Bullivant's nipper, etc., are in good condition.

Have a capstan bar ready to rouse and shift the anchor, if it hangs on letting go.

He should use his fingers to signal shackles running out.

Don't ' snub her ' violently with the cable.

If going to buoys, have one anchor ready for letting go.

Report to Captain anchors lashed for sea on leaving, and ready for letting go on approaching harbour.

Black, or white wash the cable immediately after anchoring or securing to buoys.

A fender dropped over the stem when coming to a buoy, and used as a platform for a man to jump on the buoy, is good. The man should have on a heaving line as his bowline.

He should ask the Captain on which side he proposes to bring the buoy.

If the anchor (with wire) is to be let go, have a good hand to tend the brake on the drum, or the latter will take charge and jamb the wire on it.

The Coxswain.

The coxswain is sometimes looked upon as the ship's steward. Nothing can be more derogatory to discipline than to permit this idea. It is the least important of his duties.

Outside the officers, he should be the Captain's right-hand man. He must first be an expert helmsman. Secondly, master-at-arms. And thirdly, ship's steward.

The possible excuse of 'doing the books' should never be taken with important ship work on hand.

As helmsman, he must quickly grasp the Captain's methods, and have an exact knowledge of what the craft will do under all conditions and circumstances.

There are cases when it is better not to actually con the ship, but he must never be permitted to make close shaves, and he should be quite certain of the Captain's object in his own mind.

As master-at-arms, he takes precedence over all chief petty officers in matters bearing on the discipline of the ship.

He must have a correct knowledge of the King's Regulations, and local rules as regards defaulters and their appearance on board the parent ship.

See that sick men have their bags and hammocks sent with them.

He should report himself before going on board the parent ship or to the depot, and not protract his stay there longer than is necessary to carry out the duty on hand.

He should wear the key of the spirit room round his neck, so that he, and he alone, is responsible for any shortage.

He should have a fixed time for getting up the grog in the forenoon, and this is over-seen by the gunner, or in his

absence, by the sub-lieutenant. After mixing, it should be locked up and served out at one bell in the presence of the same officer.

Being a store accountant, he must ascertain details regarding losses of engineer's upper deck stores, as well as those of his own, and report them.

He should be made responsible that the wires are oiled, flukes of anchors moved according to regulations, boats' falls turned tri-monthly, grass lines defected when worn, and that losses of stores are entered in the log.

Muster mess gear monthly, and call commanding officer's attention to money charges before submitting them.

He should report by the third of the month all mess bills paid up.

Muster boat's gear occasionally.

He is to report the helm in easy working order when the Captain comes on the bridge to take the ship out of harbour.

Report all hands on board before going to sea, and when onboard, take charge of the Bill of Health.

The torpedo instructor or next senior petty officer (seaman rating) to coxswain, becomes, in his absence, his opposite number.

Boats.

Boat.	Load Limit.	Cox. responsible for gear
Whaler	13 to 14 ft.	P. O. or L. S.
Starb. Berthon	14 to 16 ft.	T. I.
Port Berthon	14 to 16 ft.	P. O. of U. D.
Dinghy	5 to 8 ft.	Dinghy-man.

In destroyers having three berthon boats, it is best to number them 1, 2, and 3.

Dinghy-man to be kept entirely for his boat in harbour, and to be cleaned by seven bells.—Captain's servant to make second hand when required.

Every boat leaving the ship after dark should have a light fixed on a short spar in the stern or on the bow.

All boats to be hoisted after dark.

No more men should be allowed in shore boats than their license permits.

The dinghy may be used for 'emergency boat' at night, but a full whaler's crew should be detailed nightly in case any of the proper crew are on leave.

At sea, the whaler's cover should be laid over the inside of the boat and not laced on properly, ready as a sea-boat.—Have a boat-rope on the whaler at sea. Berthon boats are not now allowed to be hoisted out for an evolution.

Torpedo Gunner's Mate.

Whether the torpedo gunner's mate should be employed in upper deck work is an open question. If not, he gets time and enough for his special work. When sickness depletes the ranks, it is certain he must fill up.

He is responsible for the cleanliness of his torpedoes, tubes, racers, and the part of the deck they enclose.

He is answerable for the condition of the magazines and their bilges.

On him rests the responsibility, under the superintendence of the gunner, for the torpedoes adjustments.

In night attacks, he is to fire one torpedo.

He is the coxswain's opposite number.

He must test gravity flashing lamps, and lights before an attack.

At torpedo quarters he is to wear a whistle, and repeat whistle signals with the following meanings :—

1 shrill long. — Starboard beam.

2 shrill longs. — Port beam.

Series of shorts. — Fire when the sights come on.

Should a series of short blasts on the syren follow the signal to fire when the sights come on, it is tantamount to the "still,"—await further orders. This may save you from sinking a friend.

He is to keep the electric lighting in order, taking means to preserve circuits affected by spray, and to bring defects to the notice of the engineer officer (torpedo defects only).

He is to inform the gunner of all torpedo matters which effect him as torpedo officer.

He is to fit the war-heads as per regulations, and examine the pistols and pioneers.

Captain's Servant.

To attend his gun quarters, and keep the band-stand and its gratings clean.

To assist the torpedo gunner's mate on three days in the week, as required (forenoons).

To make third hand in the dinghy.

Lamp Trimmer.

To keep the lamps clean (all except signal lamps), to burn the oil navigation lamps (as a stand by), also the 'not under control' lamps, and keep all trimmed when at sea.

To do butcher's duties, and scrub his beef-block after use.

To be captain of the head.

To keep his portion of the galley flat clean.

To mess with the ship's cook.

Storekeeper, or Chief Stoker of the Upper Deck.

Is responsible for the paint.

Pots after use to be returned to him.

If a storekeeper shows ignorance in the art of paint mixing, he should be sent on board the parent ship for instruction, and he must learn, and learn right quickly.

On Taking over Command.

(a). Check confidential books and send receipts to Commander-in-Chief.

(b). See the following, to insure their being signed up by your predecessor :—

Wardroom wine book. Gangway book. Punishment return. Fair, and Deck Log book. Signal Log. Signal exercise book (a signal officer should be appointed). Leave books (fair, and rough). Coxswain's victualling book. Engineer's defect book (see the item). Ship's book (it is your job to keep it up). Correspondence book. Scheme of complement, and Gunnery scheme. Watch, and Quarter Bill.

(c). See that flotilla signal book, with addenda pasted in, is fitted with a lanyard; and senior signal rating responsible that it is secured at sea.

(d). Go round the ship with your predecessor and jot down the coal capacity, water stowage, ammunition carried, and principal defects.

(e). Get a table from engineer for expenditure of coal for speed.

(f). Have coxswain's stores, especially rum, checked by ship's steward of parent ship at the earliest opportunity.

(g). Examine 'lay apart' stores.

(h) See the deck watch is going, and a rate kept.

(i). Remember deviation table, and note when last swung.

(j). See when cable survey, plates and frames (both yearly), and docking (half yearly), are next due.

(k). Make sure you have Inman's, Birdwood's, and the latest Nautical almanac.

(l). See the coxswain keeps the spirit room key on his person.

(m). Make the sub-lieutenant responsible for the medicine chest, and institute an evolution—'provide bandages or tourniquets.'

(n). See that the sub-lieutenant has corrected the charts up to date.

(o). Call on the leader of your division, as well as Captain (D).

(p). Muster by the ship's books on the first Sunday.

(q). Have a look at your predecessor's order book, and give instructions that they remain in force until your own are issued.

(r). Examine the mess traps.

(s). Enquire into the method in vogue for the issue of grog.

(t). Learn the position of the bulkheads, etc., and the means for pumping out compartments.

(u). Satisfy yourself that the war-heads fit the torpedoes.

(v). Try and get a run at sea by yourself to learn the ways of your boat.

(w). Have all important books in your cabin once a week for inspection and signature.

(x). Find out what system is in force as to wardroom messing, and wardroom catering for ditto.

Whatever the system, see that an advertisment has been inserted, for three consecutive days, by your steward or messman, that the mess is not responsible for his debts.

(y). Go into the leave question thoroughly.

(z). Take the earliest opportunity of impressing all hands that in harbour they must be well dressed.—The day for imagining a destroyer to be necessarily piratical has gone for ever.

The Sub-Lieutenant.

The sub-lieutenant is appointed to a destroyer for training. It is well for both him and the Captain to recollect this.

To earn the confidence of his Commanding Officer, the sub-lieutenant must carry out his orders implicitly, whether the former is present or not. Having gained that confidence, the time is then ripe to unmask his individuality and improve, if he can; but he must always try to please his Captain and not himself.

Appended are a few hints:—

If in doubt, ask the Captain.

Turn out, *and stay out* with the hands.

Don't treat them as brothers, neither let the petty officers do so.

Try for a happy medium of energy—don't make work, nor shirk it.

Think of the comfort of the men. Here may be added, *beware of stoves*; have clearly written orders regarding them, so as to eradicate all chances of asphyxiation.

Keep good comradeship between stokers and seamen, by never giving an order which may be interpreted as a favour to either.

Encourage sport, and try to be your own 'committee of selection' for boats' crews, football team, etc.

If jumped on, be loyal, don't sulk. No doubt you were in the right, but do the other thing next time.

Remember you are first lieutenant in name, but be so in reality.

Never allow a petty officer to say.—"That's how we did it before."

Have your routines framed in the gangway, and see that they are carried out.

Cleanliness comes next to Godliness and before paint; therefore get your ship clean before you waste paint on her.

Go round the ship *in a boat* every morning.

Lead the crusade against ropes' ends over the side, wash clothes on the rails, etc., with the utmost vigour. Make the petty officer of upper deck report 'ship's side tidy' when going in and out of harbour, just to remind you to look yourself.

Remember decks are corticened, and there are orders which protect them from strong stuff—marks on the side will betray you.

Point the ropes; flemish down on Sundays.

Only have bare necessities in connection with deck cloths and spare gear.

Take a fatherly interest in the medicine chest. Remember a man's life may be saved by an up-to-date stock of bandages, tourniquets, etc. Open it at a fixed time, and give cautious doses of medicine.

Keep the fair log, and have it (up to previous Thursday) in Captain's cabin on Sunday morning, being more than careful with coal and water entries.

See the quartermasters keep the rough log properly, and sign it for your day on.

Have hands fallen in on drill days in a white working rig five minutes before evolution time, and *everything* ready for *anything*—lower booms aft.

Don't be afraid to take precautions, viz :—doubling hawsers in a strong breeze, etc.

Remember fire stations in dock or in a hulk, and exercise nightly after liberty men have gone.

Keep the bottom line (clear for dropping) in the eyes of the ship in harbour and at sea.

Be ready for sea five minutes before the time ordered.

Don't unshackle till steam is on the engines. See all clear under the stern before you give the engineer permission to move the engines.

When unshackled, stay on the bridge if breezy, in case the ship's slip rope parts—unless the gunner be there.

See all movables on the upper deck well secured, and report "all on board" at the same time as "ready for sea."

Make the petty officer of forecastle responsible for the flaps to navel pipes being worked as required.

Don't pay a muddy cable down to the locker. Have the hose going before you get the order to heave in.

Turn the hands up, going in or out of harbour, in good time, without keeping them shivering at their stations, or letting men get washed down on the forecastle.

Make sure on which side the Captain intends bringing the stern buoy.

Make an evolution of securing, and don't forget to work your flags, or Villier's lamp; also let the bridge know anything important by message.

Have a detailed 'fender party'—the ship's cook is a zealous man with a fender.

Have everything properly piped.

Look out for the "still" when passing ships, etc. (the junior pipes first, and "carries on" last).

Be thoroughly *au fait* with the station order book and parent ship's memoranda.

Have navigational instruments, etc., in the chart box ready for the Captain when going to sea, and retrieve them on arrival in harbour.

Keep your eye lifting for signals.—Every deck officer must help the signalmen.

Have heaving lines fore and aft when entering harbour, with a sand-bag at the end to facilitate throwing.

Fit rope slings for Captain and officer of the watch round pedestal of 12 pr. when at sea in heavy weather.

Ask Captain, if you think it advisable, to furl bridge screens before going to sea.

Don't let anyone be in rags, sea or harbour. Old clothes can be worn at sea, but tears must always be mended.

Correct the charts.

Your station going in and out of harbour is aft, because the propellers are the most important part of the ship. You also get a good view of men fallen in, etc.

Don't slip the dinghy, going to a buoy, until you are ordered. The best time is just so that her way will carry her to the buoy without using oars, the bowman with the heaving line standing ready to jump.

Take care the chart box is shipped on the port side of the bridge rail with the hood up; then a vessel crossing, showing her red, is not eclipsed by it.

Have the wardroom and pantry cleared up by 9.30 a.m.

Allow no officer to go onboard the parent ship, or other large vessel, in a flannel shirt.

Engineer Officer—(Duties applying to Upper Deck).

Report nis engines and steering gear ready for sea.

With old wire telegraphs, work them daily.

Detail hands to clean telegraphs and indicators.

Speeds to be understood as follows :—

Half Speed	...	As ordered by message.
Full „	...	As fast as possible under existing circumstances.

Only use full speed astern in emergencies.

A change to half speed takes place when the telegraphs are rung from *and back* to 'half speed,' after the message has been received in the engine room.

Revolution indicator or gongs are better used only when the telegraphs are at half speed.

A ring from, and back, to half speed *without a message*, is very useful when, after sundry gong alterations, the last half speed ordered is again required.

A ring 'all round' indicates, 'finished with the engines.'

Gongs :—

Two pulls—UP—5 revolutions.

One pull—DOWN—5 revolutions.

On the principal of—the more the pulls, the greater the speed.

Revolution Indicator.

To the next 10 revolutions, then half a turn back can be taken as 5 revolutions, the pointer showing half way between.

Quartermasters.

Keep a good look out.

Lead line handy.

Boats properly secured at the booms.

Know ship's pendants, and be able to take them in on the lamp.

Keep an eye on the senior officer's ship.

Assist signalman.—It is a good thing to make the quartermaster stand the rub, equally with the signalman, in the event of ships not being smartly answered. Also follow senior officer's motions in half masting ensign, night clothing, etc.

Report all officers coming onboard.

Hail all approaching boats at night.

Strike the bell night and day.

Be tidy in the gangway.

Be well dressed.

Clean the ladder and brightwork in the morning watch —and as often as necessary afterwards.

Understand the barometer and thermometer, and keep the log; writing in it sensible matter, and bringing it to the officer of the day for signature at 9 a.m.

Pipe in a proper manner.

Wear sea boots only in wet weather.

Pipe "still" when any officer over the rank of commander comes alongside.

See men on the upper deck in a proper rig.

Go rounds twice in each night watch at the strike of a bell.

Allow no boats to remain alongside the gangway.

Have a heaving line in the gangway.

Keep a boat rope on in a tideway, or bad weather.

Only go on messages for the Captain or executive officer.

Special Duties.

Senior Quartermaster :—Clean standard compass, keep reel scrubbed for patent log line, keep canvas pockets for deck log scrubbed and triced up in the band-stand.

2nd Quartermaster.—Bridge compass, and bridge wheel.

3rd Quartermaster.—Conning tower, and all in it.

4th Quartermaster.—Helm indicators, and after wheel.

Entering and Leaving Harbour.

Senior Quartermaster—Lead line.

2nd Quartermaster—Gangway.

3rd Quartermaster—Lowerers.

4th Quartermaster—Messenger.

Leave.

Watchkeepers. Noon to 8 a.m.

Commanding Officer in absence of Captain.

Either the first lieutenant or gunner is to be onboard.

See liberty men inspected leaving, and returning (those, other than petty officers being searched).

See washed clothes stopped on without holidays. When airing night clothing, have "clear lower deck fall in with clothing" first piped, then when present, pipe it up.

Pipe "still" on hoisting colours, and at sunset.

See all men on the upper deck properly dressed.—(Take a delinquent's bag for punishment).

See the hammocks have been properly lashed up. (Take a delinquent's bedding for punishment).

Have a knowledge of the whereabouts of the Captain and engineer officer, if on shore.

See the ship's appearance tidy.

See no boats are overloaded, including shore boats.

Receive all officers at the gangway, and don't forget to pipe the side for Captains of ships, foreign officers, etc.

Make sure of heaving line in the gangway, and a boat-rope on in a tideway.

Don't hesitate to double hawsers, let go a second anchor, or raise steam if weather threatens. Even go to sea if you think it necessary.

Allow no chief petty officer, or petty officer, to go or return from duty or leave, without reporting himself.

Note. (*General*).

Always use speed entering the unnatural harbours of the North Sea; Yarmouth, Lowestoft, Grimsby, etc., as you

get a reverse tide between the pier heads ; but be particularly careful in a following sea.

Officer of the Watch.

First lieutenant and gunner keep watch and watch ; the morning being kept by the Captain when on a passage—and usually the four-to-six, and six-to-eight watches.

See all lifebuoys ready for throwing from the bridge.

Write down the course.

Keep the log written up on the bridge.

Call Captain for all land lights, and all alterations in course of the flotilla.

Call Captain for any thickening of the weather.

See a good look-out is kept.

Keep careful and accurate station—inside rather than otherwise.

The officer of the watch should take an intelligent interest in everything, as much outside as inside his ship.

On sighting a steamer, sailing ship, or small boat (especially a small boat), satisfy yourself that they are not trying to attract your attention by signals, writing on blackboards or ship's side, etc.

Messing.

Mess.	Occupied by	Sweeper	Remarks.
Fore Mess Deck.	Seamen.	Seaman.	Or as convenient.
Aft Mess Deck.	Stokers.	Stoker.	
Galley.	Cook, Lamptrimmer, Engr's Servant.	Divided in 3 parts between them.	
C.P.O's.	Cox. and Chief Stokers.	Lamptrmr, or Stoker	Depending on proportion of complement.
E.R.A's.	E.R.A's.	Stoker.	
P.O's.	1st Cls PO's only.	Seaman until 9.30 a.m.	
Ward Room.	Officers and Domestics.	2 Domestics.	

The petty officer of upper deck is responsible for stowage of hammocks (seamen).

Chief stoker of upper deck is responsible for stowage of hammocks (stokers).

A badly lashed up hammock to be reported to commanding officer.

With the above little scheme on messing, my contributors conclude their remarks. By reading them, it is not difficult for anyone to gather why the destroyer service is looked upon as such a capital training school for young officers, as well as the seamen of the fleet.

As yet, the British Navy only knows these craft as harmless vessels of peace manœuvres; but we have nevertheless long been aware that when well handled in war, i.e.—by men possessed of cool calculating brains and great initiative,—not dashed to destruction by the mere animal courage of the officers and crew—what 'terrors of the night' they will become.

The relation of the cruiser to the destroyer, might well be compared to the condition of affairs which sometimes arises between John Chinaman and his native tiger. In the 'Flowery Land,' John musters his clan, and with gongs, spears, fire and brimstone, surrounds and pulverizes his enemy hiding in his rocky retreat from the noon-day sun. At night the shoe is on the other foot. 'Master Stripes' stalks the village streets unmolested; while the yellow man, quaking behind his none too strong front door, has grave misgivings of being forced, unasked, to prematurely join his ancestors. On the broad ocean how like it is!—By day, the relentless cruiser hounds the destroyer to its doom; but under the pall of darkness, the grim little boat, in return, takes a deadly toll of her whilom hunter.—I well remember when off Argostoli in 1902, how the cruisers used to fly to sea for safety as the sun went down—the term 'blockade' has left the naval dictionary.

A Destroyer and a Typhoon.

The following letter describing a typhoon was written by a Captain of a destroyer—Commander Allan F. Everett—to a great friend of his who, to the misfortune of the Service, has since died.

The description may be found instructive as well as re-assuring to those who might ever doubt the sea-going qualities of the 'River Class' Destroyers.

H.M.S. "X"
at Shanghai,
10th September, 1905.

My dear ——.

You may recollect that, just before I started for the 'Extreme Orient' in this destroyer, you expressed a hope that I would steer clear of typhoons. Should you remember the bandinage which passed during that farewell dinner at the club, you may recall to mind I flippantly replied that a typhoon would doubtless prove a thrilling experience. This letter is to confess that Providence has vouchsafed me that appalling ordeal, and has even permitted me to remain on earth to tell you so. In fact my experiences of a typhoon are still so vivid, that the contrast of sitting here surrounded by comfort in the Country Club is still somewhat of a shock to me.—It makes me wonder and ponder.

I will endeavour to describe, in the form of a narrative, what happened :—

It was 7.0 a.m. on Thursday the 31st August that the "X" and "D," having completed their battle-practice off Wei-hai-wei, proceeded in company, bound for Shanghai. When we left there was nothing more suspicious about the weather than the prospect of rain from the south-east. The aneroid stood at 30.20 with a light breeze from the south-south-west. As the signal station gave no typhoon warning, we gaily set off at fifteen knots, expecting to reach Shanghai about five o'clock the following afternoon. On rounding the Shantung Promontory I steered for the middle Saddles, so as to make certain of keeping well clear of the Shaweishan lighthouse guarding the northern channel of the Yangtse. Having so recently fired my twelve-pounder piece, I was anxious to ascertain if my deviation had altered, but the sun only peeped out for a moment, and then too early in the afternoon to render the result reliable, or re-assuring. The early morning of the 1st of September shewed little promise for partridge shooting or any other form of sport, including yachting.

At 4.0 a.m., the aneroid stood at 30.00, wind south-east, force, 3. At 8.0 a.m., the aneroid had fallen another tenth, the wind had backed to east, and had increased to 5. Toward the south-east, from which direction a considerable swell had set in, the sky presented an uncanny appearance, and the weather looked decidedly threatening. However, as I calculated that I was but seventy miles from the Saddles, I felt quite easy in my mind that I should make a land-fall by noon. I wanted to push on, but I found fifteen knots quite

as much as the craft liked with the rising sea and wind. At 10.0 a.m., I was forced to reduce to thirteen knots, and an hour later to eleven knots ; the aneroid then having fallen to 29.80, the wind being on the port beam blowing from the east, force about 6. At half past twelve the situation was as follows :—By dead reckoning I should have been about eight miles from land (right ahead) ; should I force on or not ?—Not having been at all certain of my deviation, my assumed longitude might have been fifteen minutes wrong. It was impossible now to see more than two or three miles. The aneroid had now dropped to 29.60 and was still falling at an alarming rate. The wind and sea were rising from the eastward, the appearance of the sky from the south-east was dreadfully ominous, in fact it seemed no longer possible to doubt the rapid approach of a typhoon. Supposing I hung on to my course, would the sighting of land be of much help ? If I saw any strange land, was it reasonable to suppose that I would be able to detect its identity from the chart.

As my range of vision was getting less than a mile, you can imagine the alluring prospect of negotiating the pilotage of those rock-bound islands in the hope of shelter.—A sheltered anchorage for a " swollen-head " destroyer.

Note :—The River Class Destroyers have high forecastles, with the result that they are only too liable to drag at anchor when it blows.

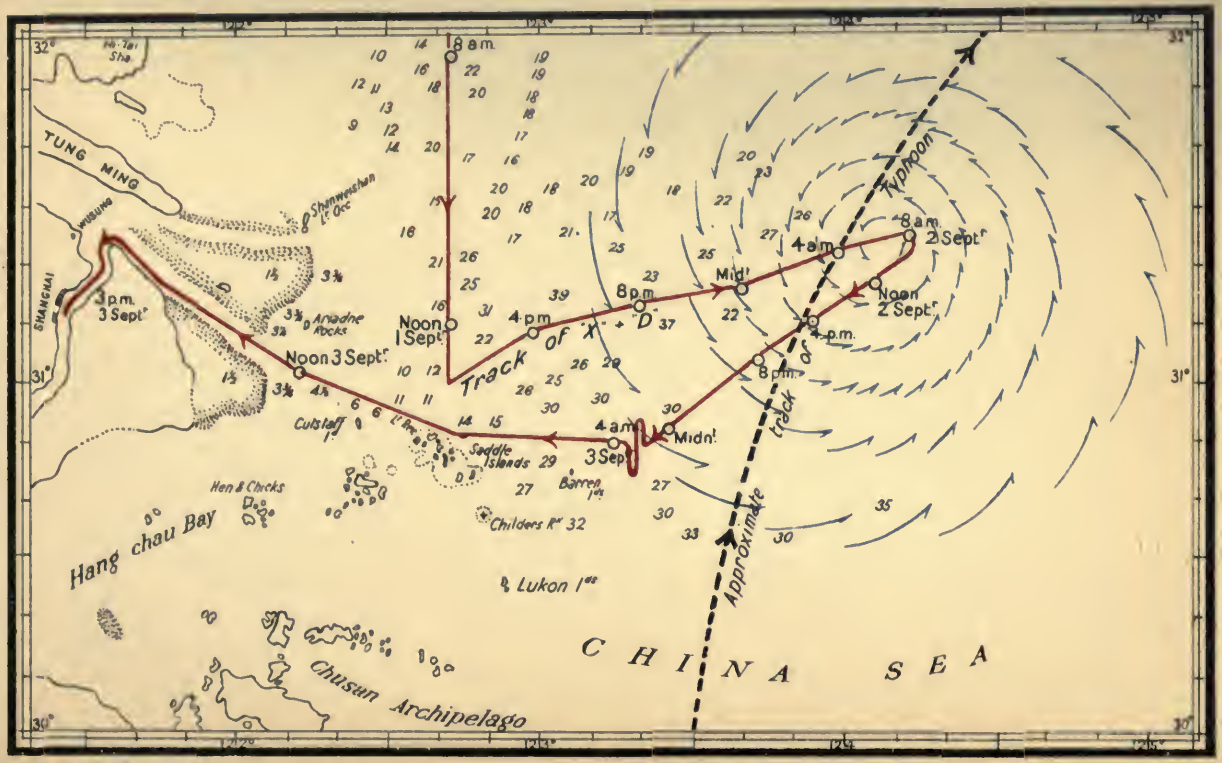
So you will hardly be surprised that I determined on (what appeared to me) the lesser of the two evils. I decided

to seek the open sea, where our high forecastle would come into play for our salvation instead of probably proving our damnation by blowing us ashore.

The decision made, I signalled to my consort to lie-to—heading to the eastward. In putting the helm over, to execute this, a curious incident occurred which I will relate to one who, like yourself, understands the Chinese superstition commonly expressed out in those waters by the words "bad joss." To face the sea, when I abandoned my design to make a land-fall, I put the helm over myself. In the act of doing so, a sea struck the ship, and a flourish I made to get hold of the wheel caused my wedding ring to fly off (my hand being wet) and to go overboard. I could not help thinking at the time what kind of "bad joss" this misfortune might portend.—Did it foreshadow separation?

On getting the craft's nose to the sea (east-north-east), my previous idea of lying-to underwent a shock. I had conceived the idea of keeping her head straight on, at a dead slow speed of the engines, but I soon discovered that to keep her bows from being blown off it was necessary to steam revolutions, from nine to twelve knots, and this gave me a rate through the water of about three, to three and a half knots.

As the first lieutenant was the last from school, I refreshed my memory with him about the laws of storms. From official publications on the subject, it seemed, both from the steady fall of the barometer and the direction of the wind, that we were in the worst semi-circle of the typhoon, and, if the direction of the wind remained constant from east-north-east, we had the disquieting prospect of investigating



TUNG MING
SHANGHAI
WUSUNG
Shanweishan Lt Occ
Ariadne Rocks
Cutstaff Id
Saddle Islands
Barren Ids
Childers Rk 32
Lukon Ids
Hen & Chicks
Hang chau Bay
Chusan Archipelago
CHINA SEA
Track of "X" + "D"
Approximate track of Typhoon
8 a.m.
Noon 1 Sept.
4 p.m.
8 p.m.
Midn.
4 a.m.
3 Sept.
Noon 3 Sept.
3 p.m. 3 Sept.
Noon 2 Sept.
4 p.m.
8 p.m.
4 a.m.
8 a.m. 2 Sept.

the joys afforded by the vortex of a hurricane. It appeared from the Book of the Rules that the best course for us to pursue should have been north-westerly, but as that would lead us towards a lee shore—the distance of which was as unknown quantity to me, and might be anything from ten to thirty miles—salvation in that direction was denied us. It was therefore necessary to steel our minds for the unknown delights officially reported to be found in the centre of a typhoon. The first lieutenant and the gunner busied themselves in securing all moveable gear; and at 4.0 p.m. the first lieutenant cheerily reported that 'preparations for the worst' had been made, and that all was 'snug'.

The "D" had been lost sight of at 3.0 p.m., but at 6.0 p.m., when the rain happened to be less torrential, she reappeared about two cables on our beam, and I then managed to repeat her the signal—"Rendezvous, in case of separation, etc., at Shanghai." The mention of Shanghai, at that early state of the game, was to my mind somewhat overconfident, but as the signal book only contains geographical localities, I had perforce to be optimistic.

On darkness setting in over the troubled seas, the "D" was (not altogether to my grief) lost sight of again. The extraordinary attitudes she assumed, and the contortions she went through, were more interesting than reassuring. At times she would be poised on the crest of a sea, her fore part high and dry (so to speak) leaving her keel visible up to the conning tower; the after part, also naked, shewing her propellers racing in the air. Then she would take a dive, an intervening wave would blot out this merry picture, and then, to one's relief as the wave passed by,

a mast would appear waving on the other side until, thank goodness, one would catch sight of her funnels and then her hull, still above water. It required little imagination to realize that the "X" was behaving in a similar manner. It was with great difficulty that one could hold on to the bridge; my avoirdupois commenced to tell on my arms and legs, and they began to get weary with the strain.

My first lieutenant's cheerfulness had now received a check, his 'number one piece' awning bin had been washed into a cocked hat, and some of the awnings had disappeared over the side. These losses, however, could be officially replaced, but it was indeed a solemn matter when it also meant that the whole of the laboriously acquired deck-cloths had been swept clean away—for ever. Months and months of scheming to make the "X" look nice, and then in a few brief moments to see the whole collection of niceties swept over the side. From the high and lofty bridge I had watched the wave which had been guilty of this destruction. I thought we would have risen and have passed over it, but its crest was so highly inquisitive that it came bounding inboard just before the after pair of funnels.

The foremost portion of the awning bin gave in at once, and it was difficult to gather how much of its contents accompanied the cascade in its exit astern. An engine-room and a boiler-room cowl had been unshipped, and were cruising about on the upper deck trying to keep motion with the ship. The dinghy looked distinctly unhappy and crushed. Awnings were floating about, and the upper deck looked generally in a deplorable state.

The first lieutenant, with the torpedo instructor and a few men struggling with the help of life-lines, were soon to work on salvage operations. My engineer lieutenant, Carruthers, then appeared, and anxiously inspected the gaping apertures vacated by the cowls leading down to the engine-room and after stokehole. This was indeed serious, as I gathered from his report that water was finding its way through these openings more rapidly than could be pumped, or ejected overboard.

The flaps, you will remember, are, for some reason, fitted in the *moveable* part of the cowl, which device serves no useful purpose when the moveable part is removed bodily by a sea. The fixed coamings, standing over two feet above the level of the deck and surmounted by a flange (on which the cowls revolve), seem to lend themselves for battening down by lashing canvas across, but it required some searching to discover a piece of canvas for the purpose—moreover rope was scarce. However, the job was done at length, and not too soon, as Carruthers expressed anxiety owing to the choking of the pumps and ejectors. The stokehole plates had worked away from their frames, and thus permitted ash and small coal to wash about, and so choke up the ejector orifices.

From Carruthers I grasped that there was just cause for anxiety unless the ejectors could be cleared. As you know, the use of ejectors involves an exorbitant amount of steam, alias water; I had the two unlit boilers to veer and haul on for water, but, considering our remaining coal supply and its bunker disposition, the absolute uncertainty as to how long, or how far, I should have to steam (at the most

uneconomical consumption) away from the land, the possibility of having to light up in our remaining boilers on account of the position of the coal, or for more desperate reasons; you will understand that I, the wretched Captain, was beginning to feel bored.—But Carruthers was equal to the occasion. To clear the ejector orifices necessitated men working on the bulkhead side of the boilers, which, as you are aware, means an acrobatic descent down a small man-hole hatch, and working in a space which only permits one man at a time. Remember too, that the boiler concerned was alight, and so imagine the excessive heat. Add to this the lurching of the ship, and that the hatch had to be closed to prevent a surfeit of water getting below.

I do not know what Carruther's feelings were on the situation, but I cannot forget my own. I was impressed with the knowledge that if the ejectors could not be made to act, it was only a matter of time before the fires would be flooded, and yet, whenever the noise of the natural elements would permit, I could hear those ejectors roaring out steam. Now and then, as she rolled to leeward, the roar ceased; and I chuckled at the idea of water coming out, when, in reality, the outlet was under water. Not to labour this point too much, Carruthers, to my intense relief, eventually reported that the ejectors had been sufficiently cleared, and that the ingress of water was under command.

I have since been told that an artificer cleared these orifices, and as the conditions under which he effected this shewed (to my mind) such obvious bravery, I trust he may be suitably rewarded. Men have obtained the Humane Society Medal or D.S.O. for the sacrifice of far less personal

comfort than this man did, and he had nothing to spur him on to action by the excitement or impulse of the moment. He worked under hellish conditions for two hours.

As the night advanced I harboured no illusions as to any rest. How I longed for the morning, and with it the hope of better things. Here I was in a flimsy craft, with its three sixteenths of an inch between the devil and the deep sea, deliberately having to punch away against a typhoon, and all the time knowing that every revolution of the screw, and each mile we travelled, was bringing us nearer the unknown possibilities of its centre. It seemed to me an odd sort of paradox to have to seek safety by doing my best to reach the centre of a typhoon, when, although I had seven thousand latent horse power at my command, I found myself impotent to act otherwise. By the rules, I knew what I ought theoretically to do (and now I am glad I did what I did), but at moments I must confess I wondered whether my action would have been considered seamanlike, supposing anything had happened. Up to then I had been impressed with the idea that our salvation rested in keeping my high bows on to the sea.—The shortest route out of the typhoon would have necessitated my getting the wind and sea well abaft our beam. Apart from the lee-shore objection, and my uncertain longitude, I was not completely assured whether running with such a high steep sea would altogether agree with the build of my craft, but, by accident, the early part of the first watch gave me an object-lesson of what might happen if I did not keep our bows pointed toward the enemy.

The compass light having become extinguished, the quartermaster had to steer as best he could by keeping the

wind, etc., full in his face, but as he apparently could not conveniently keep his face bang on to the wind and spray (called "flying spume" in novels), he allowed the craft to be blown about five points off the wind before the mistake was discovered by the ship being nearly thrown on her beam ends, and a huge sea crashing along the upper deck.—This immediately dissolved any doubts which may have lingered in my mind as to the policy of making the best use of the high bows. When I had got the craft nosing the elements again it was about nine o'clock, and by this time I felt completely tired with life—such as it was. Feeling somewhat famished, and wishing to "makee look see" the state of the wardroom, I toiled aft by short rushes. To an onlooker, this would have proved a most ludicrous spectacle. Besides being handicapped by an oilskin, I was stiff from constant holding on, also sore and bruised by collisions on the bridge caused by my fairy form occasionally breaking away and taking charge, until brought-up all standing (or otherwise) by the lee bridge rails.—The bridge, thank goodness, is too narrow to get much way on.

It was a most undignified proceeding to get aft. Hanging on to life-lines (more or less slack), crouching down to lower my centre of gravity with the roll of the ship, dodging behind the funnels, then swinging round a funnel guy, crawling along the deck like a dog, bumping up against the tethered and unseated cowls, hugging the torpedo tubes for dear life until the ship got on an even keel, then a short rush to the nearest piece of fixed furniture ; all this, exciting and troublesome as it was to me at the time, was far funnier in the abstract than in its concrete reality.

On descending to the aft-deck, it was evident that all was not well. On the deck there was just sufficient water flopping about to overflow the cabin coamings at the extreme end of the roll. A glance into my cabin satisfied me that my 'number one' frock coat had seen its best days. Some of the lower drawers had been jerked out, and their contents littered the deck, where, in company with my boots, they swished from side to side.

Leaving this lugubrious sight, I turned my attention to the wardroom, whence proceeded a *hideous* racket. It appeared that two ordinary chairs and the arm-chair were chasing one another from side to side of the mess, trying to conform with the movements of the ship. The arm-chair, owing to its width, was severely handicapped, in-as-much as it occasionally jambed between the stanchion and the bulkhead. The chairs being lighter, and with a higher metacentre, were more agile, and frequently succeeded, when the ship gave an extra lurch, in jumping the arm-chair. The settee cushions, aided by the water on the deck, were also trying to compete. To add to the chaos, my official papers had joined the debris on the deck, and were washing about. On salving them, I discovered the contents of a bottle of red ink, and the mess condiment bottles had added considerable colour to the effect. My "*Yost*" typewriter, which had been previously tethered to the leg of the settee for safety, had evidently been biffed by the arm-chair, when, in its mad career, it had evaded that article of furniture and 'got home.' As its wreck was obviously complete, I left it where it was, and, on taking it to the agents here, was offered three dollars for it.

I then negotiated the pantry, where I found a huddled mass of Chinese 'boys' on the deck, looking perfectly impassive as usual. On my stirring them to action in order to restore better order amongst the wardroom furniture, my servant greeted me by saying, "makee plenty bad typhoon—bad joss." I ordered him to produce me both food and drink, a demand he reluctantly obeyed. 'Cheesai' was sent down the man-hole hatch of the store room to forage, but resented the water on the aft-deck when, in its ebb and flow, it poured down his back. Eventually he produced a tin of Cambridge sausages, which he succeeded in opening, and I in devouring. After this I felt I had quite enough of what is termed our 'living space', and so commenced my return journey to the bridge.

As the pantomime to get back was similar to what I have already described, I will only mention one detail in my voyage forward. I had occasion to seek security by hanging on to the fore-and-aft awning ridge-rope which stretches from the after funnel to the ensign staff stanchion. Feeling that the ship was on the point of taking a header, and that it would be wise to anticipate a sea coming inboard, I hung to the ridge-rope letting my feet dangle. When she hit the succeeding sea, the ridge-rope suddenly slacked to such an extent, that my feet felt the deck, and, for the moment, I thought the ridge-rope had carried away, but, to my astonishment, as I hung on, I felt it tauten again like a bar. Thus it dawned on me how a destroyer could, thanks to modern steel, bend without breaking.

Midnight showed no promise of improvement as far as the elements were concerned. The aneroid was 29.35 and

still tumbling down. The wind remained constant in its direction, viz., east-by-north (the significance of its consistency was appalling), and blowing for all it was worth. The rain was torrential, but it was only by putting out one's tongue that you could make certain it was rain and not drift. The deluge was a blessing, in-as-much as it undoubtedly beat the sea down to an appreciable extent; moreover it helped to wash salt from one's eyes, which were apt to smart.

The middle watch (the longest I have ever experienced) passed without any alarming incident. I endeavoured to rest in the chart-house, but physical effort to keep steady on its narrow settee made ideas of repose a hollow mockery. I mostly watched the aneroid with considerable anxiety, and wondered when it would all be over. Occasionally in sheer boredom I struggled outside on the bridge, with the only consolation of getting washed down by the fag end of a sea as it expended itself against the gun platform.

At 4.0 a.m. on the 2nd September I formally relieved the gunner, and sent him round the ship to report the state of the different mess decks. At about five o'clock, when dawn appeared to be breaking, it became evident that the crisis, as far as the typhoon was concerned, was near at hand. At four o'clock, when I took over the watch, the aneroid had shewn 28.90, and at five o'clock it had fallen to 28.55,—and three and a half tenths in one hour is not a bad record for a destroyer's barometer. The first lieutenant, who then paid me a visit on the bridge, making a mistake of an inch in the reading, was glad to observe that the barometer had apparently risen since he was relieved at midnight, but he was soon disillusioned, and my barograph below told the same lugubrious tale.

It was now blowing the most terrific gusts, and the craft was being subjected to the most alarming shocks. As the light increased, one could better foresee the approaching seas as they toppled towards us. I must confess that, ostrich like, I preferred the darkness. At times it seemed impossible that we could rise in time. The craft would take a header off the crest of one sea into the succeeding hollow. As she dived one would look aghast, and see, towering in front, a sheer cliff of sea with an ugly boiling crest about to engulf the ship. Instinctively one would hold on for dear life, maybe also, shut one's eyes, and bowed the head in anticipation of the inevitable water-fall. Often to my intense surprise, when I thought it was all up with us (and I was so fed up with the business, that I fervently hoped then that the agony of it all would soon be short circuited), she would rise to to the occasion, but only soon to experience the same feeling again.

There were times when she got out of step, when in taking her dive, she was naked (i.e., not water-borne) up to the foremost funnel, and then woe betide one's innermost feelings if she took an acute belly-flopper.—You know what I mean. I had experienced it to some extent in a thirty-knotter, but it was nothing to the shock I felt the ship (and myself) sustained on this occasion. The water, I suppose, hitting the naked form of the ship simultaneously throughout a large area, naturally struck her with immense force. The effect was to bring the craft up 'all standing,' and the blow would be followed by an almost human shivering, which was apt to make one think that the hull had not been able to withstand it.

I need hardly say that we had been 'flopping,' ever since the typhoon had begun to make its force felt, in increasing ratio to the sea set up; but I had become more or less case-hardened to it, as nothing seemed to happen, but this morning watch business was far more than was good for my nerves at times, —"fair give me the goose-skins" as the housemaid said.

At 7.0 a.m., the aneroid had sunk to 28.05, and palpitating down as low as 27.97. The rain almost ceased. Overhead it looked so bright that one expected to see blue sky. The wind had suddenly dropped to squalls as low in force as 4, and less. The sea now presented a remarkable sight. There was no consistency in its direction. The cessation of rain and the brightness overhead permitted one to see for several miles. Only the crests were breaking, and they did not seem to care which way they fell, they just tumbled over because they were too tired to remain standing up. The ocean appeared a cauldron of steep cones, each acting independently of the other, the result being the *utmost* chaos. Some of these seas would clash together on opposite courses, and the effect would appear in the shape of a water-spout I was fearful I should hit one of these columns of water, but fortunately luck steered me clear. A few fugitive land birds added interest to the scene, but (easy as it is to write about it now) the prospect of what the lower semi-circle of the typhoon had in store for us, concerned my mind more than the natural philosophy afforded by its centre.—Moreover, there was little time granted me to study the scenery, or for profound reflections. The ship was wallowing like a pig, and I was asking myself "what next," and "how long, Oh Lord?"

My mind and attention were both fully occupied. For the moment I could not help feeling cheery, because every visible indication was promising; until reflection brought me up 'all standing' to the fact, that, after all, we had only got through one half of the typhoon,—there still remained the *other* half to be negotiated.

'Half-time' had been called, but having weathered the worst portion, one had all the more stomach to face a repetition. It was not a very pleasing prospect theoretically to know that our troubles were only partly over, but having traversed the centre safely, one's heart was in it to get completely out of the mess.

I have taken longer to write about the centre than the time (I can correctly say) we were actually in it. As a matter of fact, I do not suppose that the bright sky overhead, and the cessation of wind, lasted more than about ten minutes, when the squalls suddenly veered to the east-south-east.

By twenty minutes past seven it was blowing viciously from the south-east. At 8.0 a.m., the aneroid had risen to 28.15, with the wind blowing as furiously as ever from the south. In bringing the ship round gradually to face the wind, I was delighted to think that every moment now was taking us clear—carrying us towards peace and safety.

At 10.0 a.m., the aneroid had risen to 28.50, the wind had veered to the south-west, but had not shewn any diminuition in force. It was some time at this period that another boiler-room cowl succumbed to the sea, and gave a lot of

trouble before it could be securely tethered.—Having assumed a different shape than what it had been designed for, it declined to resume its intended position.

At noon, the wind had further veered to west-by-south, and it was a mighty comfort to note that the aneroid was well on its way up the next street so to speak, as far as inches were concerned—it had reached 29.15, and this gave a rise of six and a half tenths of inches in two hours. The strength of the wind had also diminished to about 8 in force. The rain was still torrential, but the sea was less confused.

With the assistance of the first lieutenant, I made efforts to conjecture the "X's" position on the chart, but the result hardly came under the navigational category of even an "assumed position." The chart was a sorry sight to see, as most of the paper was detached from its cloth back and in a pulped condition, parts of it being washed overboard. Drawing a circle of thirty miles diameter, in the hope that it would embrace us, I steered in a west-south-westerly direction, where I reckoned we should strike land by the nearest route.

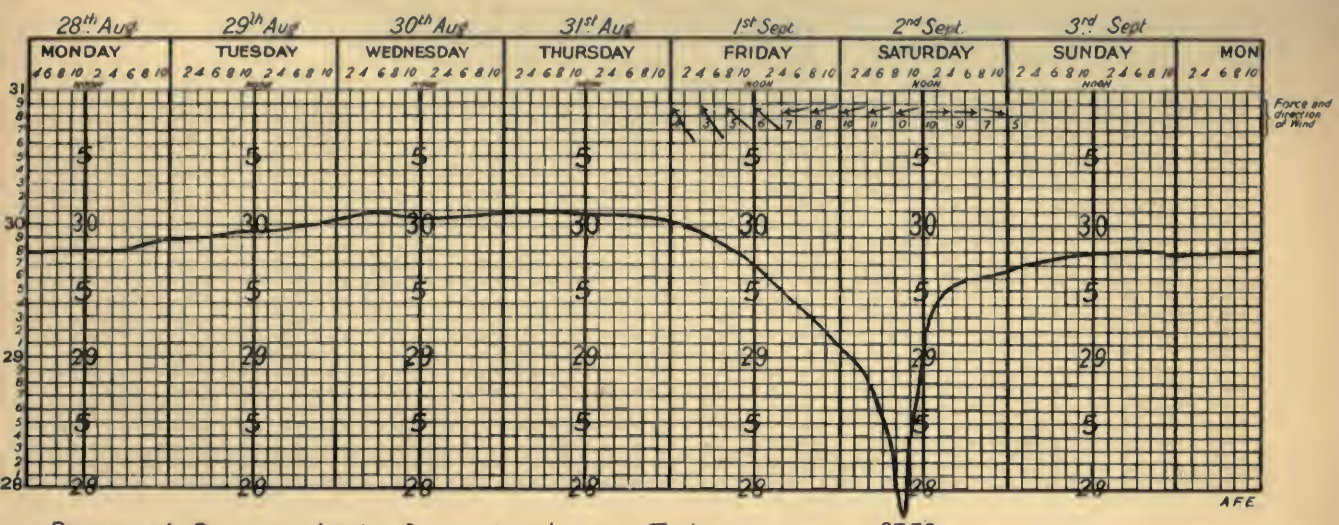
At 2.0 p.m., the barometer was 29.32, with the wind west, blowing about 7. I then congratulated the "X" that her three sixteenths of an inch was still intact, and that that amount of steel still remained between us and the devil and the deep sea. My optimism, however, received a severe shock when the gunner reported water squirting up into the fore mess decks from the twelve pounder magazine. From an examination of the state of affairs, it was only too evident that both 12 and 6 pounder magazines were flooded; as it

was found that, before and abaft these magazines, the compartments were comparatively dry, it was fairly obvious that the three sixteenths of an inch bottom was no longer quite intact. Carruthers was soon to work, but, as you know, it was only possible to drain the magazines by allowing the water to pass through the slop room before it could reach the nearest ejector to be pumped out. This was permitted, and in about twenty minutes the ejector, by belching steam, told the gratifying tale that the magazines were dry again.

After a quarter of an hour, I was told that a perfect pandemonium appeared to be going on in the magazines. It was soon clear that this was caused by the ammunition boxes becoming afloat, and coming into contact with one another owing to the lurching and motion of the ship. As it was only waste of steam to eject the water again, I deemed it best to allow the magazines to fill, and to remain so—meanwhile the vacant screw-hole on the mess deck was plugged to prevent the mess deck becoming flooded.

By 6.0 p.m., the aneroid was 29·75, and the wind (still westerly) rapidly decreasing—below 6.

At 2.0 a.m. on Sunday the 3rd September, I thought we might possibly be inconveniently close to the Barren Islands, so I steamed slowly north and south until daylight, when, to my joy, I sighted some rocks to the south-west. Closing, I determined them to be the Barren Islands, so I altered course to pass the Saddles, and to make the Gutzlaff Light off the southern entrance to the Yangste, and increased to twelve knots. Shortly afterwards, and before I sighted any of the Saddles, we ran into pea-soup coloured water, which caused me



Barograph Diagram shewing Depression due to a Typhoon experienced off the Yangste, China Sea, in 1905 by H.M. Destroyers "X and D."

to stop and sound (Thompson's Sounding Machine being damaged). The result being twenty-five fathoms, and sighting the Saddles almost immediately afterwards, I felt reassured of our position, as the discoloured water was evidently discharged from the Yangste. So off we steamed at increased speed, with joy at our hearts.

The galley had by this time been lighted, and never can I forget the delicious taste and refreshing feeling of a hot cup of cocoa on that occasion. During the height of the typhoon I had essayed to refresh my body with the aid of a soda water bottle filled with whisky and water, which I had managed to bring on the bridge. I wonder now if I really ever drank any of it at all. I remember making a desperate effort to get some in my mouth while clinging on to the gravity-lamp pole, but what with the struggle to hold on, and the spray, I was doubtful whether I was tasting sea water or whisky. I tried lying down on the bridge and training my bottle in a suitable direction, waiting for the lee roll to pour some of it into my mouth. It was a ghastly failure, so I placed the bottle in the flashing-key box.

Having determined our position, and set the course in smooth water, I went with a full heart to my cabin where I took off my clothes, and in that lipped saucepan (the so-called bath of a destroyer), no sparrow enjoyed a puddle-bath better than I did then. Getting into a boiled shirt with a neck-tie and the best uniform left me, I sat down to my first meal for nearly forty-eight hours. How much I ate, and how much I enjoyed it, cannot be recorded, but the only fly in the ointment of my satisfaction, was the soreness of my salted and sleepy eyes, and a bruised and stiff body.

At 11.0 a.m., we arrived off the entrance to the Yangste. Here, to my everlasting shame, I took a pilot. My excuse is, that the large scale chart of the river's entrance was destroyed, and that I was dog tired. Moreover, I possessed no pride at that time which could prevent me from enjoying some relaxation from the strain of the last two days.

Except for sore eyes, and general physical fatigue and mental weariness, life seemed remarkably sweet. The pilot, to my intense relief, had told me that a destroyer similar in ugliness to the "X" had passed up the river two hours before us, so my cup of thankfulness was full, as she must have been the "D".

On our way to Woosung we went to our Morning Prayers. The first lieutenant considerately read them forward abreast the mast where I could hear from the bridge. I glanced over the rails, and it it was evident from the expression on the faces of my ship's company, that they also thanked God for the Mercies received.

Ah Khan, my Chinese servant, was also looking on; and even on his usually impassive countenance there lurked a strong suspicion, on this occasion, that he was sympathetic, to a certain degree, with foreign-devil Joss-pidgin.

After prayers, efforts were made to tidy up the upper deck. The dinghy had her outside bow smashed in, and its foremost davit was so bent, that it declined to turn out. Three of the large cowls, beaten out of shape and unseated, were lumbering up the deck space. The small copper cowls flanking the after compass were squashed, as if they had

been made of brown paper. The pet awning bin was a complete wreck, and its original contents gone The side rails on the starboard side amidships were flat, having, for some curious reason, got bent outwards. The wash-deck locker had ceased to exist as such.

The jack-staff lay prone, but otherwise the forecastle, thanks to extraordinary precautions, had suffered little damage. My four-fold wireless aerial, festooned from the topmast (which had bravely withstood the whip) in a tangled web. The wireless instruments looked in a hopeless state (slightly out of adjustment, so to speak). The general havoc among clothes and mess-traps was woeful; and what the condition of the foremost magazines and store-rooms could be in, might only be imagined. Owing to the water in the magazines, the "X" was down by the head, and the top of her rudder was above water.—We must have looked a pretty sight.

At 3.0 p.m. we passed the 'chow water' at the head of the English Concession, and then sighted the "Bonaventure". Soon after I was safely secured alongside the "D" at the P & O. buoy.

In the evening, the skipper of the "D" and myself thoroughly enjoyed the hospitality of Captain T——of the "Bonaventure" at dinner. Like this interminable letter we talked 'typhoon' ad nauseam, and our host was polite enough not to seem bored.

The next day, in spite of a tanked dock-master, the "X" was safely landed on the blocks of the Tankadoo dock; where, after some difficulty, owing to the jagged condition of

the said dock-master, we were eventually pumped dry. It was discovered that about fourteen feet of the "B" strake had been forced in between the frames, and that the rivets had been sheared. When I recall (which I can without any difficulty) some of these awful belly-floppers the craft took, and realized by inspection in dock, what amount of holding power a countersunk rivet can possibly have in a three-sixteenth of an inch plate, I can only wonder that I am now in this world.

The Captain of the "D" was much struck by the blue sky and calm which he experienced in the centre of the typhoon. Apparently he was about six miles behind me when he passed through the centre at 6.0. a.m. He was greatly impressed with the number of kingfishers and other land birds which sought refuge on board the "D" when they got into the calm vortex. He also reported having sighted the C.P.R. steamer (bound for Shanghai) on the evening of the 1st September (just at night-fall on that day when I lost sight of the "D"). This "Empress" steamer appears (judging from the accounts of some of her passengers) to have been quite concerned about our safety, but fortunately did not know our identity, so did not fuss about us here on her arrival. The Captain of the "Bonaventure" happily was not told when we had left Wei-hai-wei, until the day we actually arrived here, and so he was spared some thinking about us.

Shanghai seems to have suffered severely owing to a flood caused by the typhoon. Five thousand Chinese are said to have been drowned by some low-lying island being flooded in the storm, but whether it be true, or exaggerated, the the fact is only mentioned as a casual incident.

And now my dear ——, I must close this over long letter. It has taken me many hours to write, and it will have bored you.

However, a tedious letter is better than a tiresome talker. The former you need not read; but often, with the latter, one is obliged to listen. For some vague reason it has been a relief to me to describe—however tediously—my experience, and, to some extent, my feelings.

With knowledge, age, and position, one too consciously acquires the sense of responsibility, often to your discomfort, and, if it is shewn openly, one lays oneself open to the sneers of your subordinates, who in their sense of irresponsibility, merely consider you a nervous old fool. Although I confess to having felt responsibility on this occasion, I trust I never shewed it.—Nevertheless I did inwardly.

I have written this letter almost immediately after what I have gone through, and so, if I have appeared hysterical, make me allowances.—

So long.

Yours very sincerely,

A.F.E.

Functions.

It had not been my first idea to have written anything in 'Whispers' in connection with Functions; but as Naval Ceremonies often reoccur, I have taken the liberty of entering the procedure of two important, and successfully carried out incidents, which took place on His Majesty's—(The Admiral of the Fleet) late visit to Malta.

Orders for Review of the Naval Brigade on the Marsa,

by

HIS MAJESTY THE KING.

1. In the event of an inspection of the Naval Brigade on the Marsa by H.M. the King, the Brigade will be constituted as follows :—

In Command.—Rear Admiral, 2nd in command of fleet.

12 pr. Field Gun Batteries.

In Command.—Flag Captain of Cruiser Flagship.
Staff Officer.—Lieut. (G). do.

No. 1 Battery.		No. 2 Battery.	
Commander, Battleship		Commander, Battleship.	
Lieut. (G).	do.	Lieut. (G).	do.
Battleship.	2 Guns.	Battleship.	2 Guns.
do.	2 „	do.	2 „
do.	2 „	do.	2 „
	6 Guns.		6 Guns.

No. 3 Battery.

Commander, Battleship.
Lieut. (G). do.
Battleship. 2 Guns.
do. 2 ,,
do. 2 ,,

6 Guns.

No. 4 Battery.

Commander, 1 Cl. Cruiser.
Lieut. (G). do.
1st Cl. Cruiser. 2 Guns
do. 2 ,,
2nd Cl. Cruiser. 1 ,,
do. 1 ,

6 Guns.

No. 5 Battery.

Commander, Battleship.
Lieut. (G). do.
Battleship. 2 Guns
do. 2 ,,

4 Guns.

Total. 28 Guns. 47 Officers. 547 Men.

BATTALIONS.

Brigadier. The Chief of the Staff
Staff Officers. Lieut. (G). Flagship.

No. 1 Battn.

Commander, Cruiser.
Lieuts. (G) { Battleship / do.
Battleship. 276 Men.
do. 268 ,,
do. 268 ,,

No. 2 Battn.

Commander, Battleship.
Lieuts. (G) { do. / do.
Battleship. 236 Men.
do. 262
do. 264

3rd Cl. Cruiser.	77	„
do.	79	„
Despatch vessel.	37	„
	1005	Men.

Torpedo vessel.	154	„
3 Destroyers.	37	„
	953	Men.

No. 3 Battn.

Commander, Battleship.		
Lieuts. (G) do.		
Lieuts. (G) Rifle range.		
Battleship.	266	Men.
do.	264	„
do.	261	„
3rd Cl. Cruiser.	77	„
10 Destroyers.	120	„
	988	Men.

No. 4 Battn.

Commander, 1st Cl. Cruiser.		
Lieuts. (G) Cruiser.		
Lieuts. (G) do.		
Lieuts. (G) do.		
1st Cl. Cruiser.	254	Men.
do.	254	„
2nd Cl. Cruiser.	148	„
do.	148	„
do.	155	„
3rd Cl. Cruiser.	31	„
	990	Men.

No. 5 Battn.

Commander, Battleship.	
Lieuts (G) do.	
Lieuts (G) do.	
Lieuts (G) do.	

No. 6 Battn.

ROYAL MARINES.

In Command,	Major.
Maj. of Battn.,	Major.
Adjutant.,	Lieut.

Battleship.	261 Men.
do.	241 „
do.	268 „
do.	245 „
	1015 Men.

	Grs.	Ptes.
Battleship.	40	40
do.	39	40
do.	40	40
do.	39	40
do.	39	40
do.	40	40
do.	40	40
do.	40	40
do.	40	40
do.	40	40
do.	39	39
do.	40	40
do.	40	40
1st Cl. Cruiser.	34	34
do.	—	75
2nd Cl. Cruiser.	—	40
do.	—	35
3rd Cl. Cruiser.	—	15
do.	—	15
do.	—	15
"Hibernia."	—	110
2nd Cl. Cruiser.	—	35
Torpedo vessel.	—	50
3rd Cl. Cruiser.	—	2
Despatch vessel.	—	4
	550.	940.
	1490 Men.	

FORCE LANDED.

	Officers.	Seamen, or Marines.
With Field Guns.	47	537
With Battalion.	183	6491
Band, etc.	1	174
Keeping ground.	10	490
Details.	13	54
	254	7746

Grand Total 8000.

Any ship not being able to land the above numbers of Marines to signal at once to flagship.

Marines to land with proper proportion of N.C.O's.

All Marine Buglers to land with massed bands.

Battalion and Battery Leaders will make the necessary arrangements as to their Battalion, Company, and Battery Officers', composition of Companies, etc. 1 Sub Lieut., and 1 Midshipman (or 2 Midshipmen) are to land with each Company, and one Midshipman with each Field Gun.

Each Battalion is to consist of 7 Companies of equal strength.—Companies should be sized.

Field Guns crews are to wear cutlasses.

The Brigade will be drawn up on the Marsa facing the polo pavilion, with the Battalions in line of Quarter Columns at 12 yards interval; Field Guns on the right in line at right angles to the alignment, Batteries at close intervals 2 paces apart.

Inspection.

The following will be carried out :—

On arrival, His Majesty will be received with a Royal Salute, after which he will probably Inspect the Brigade.

The Naval Brigade will then march past.

Field Guns by Batteries, at 30 yards interval.

Battalions in Column, Battalions 80 yards apart, swords fixed at the slope. Officers to Salute, Lieutenants of Companies ordering "eyes right" as usual.

The Brigade will then be reformed on the Base of Formation, and Advance in Review Order, Halt, etc., and give three cheers.

Dress.

The dress for officers and men will be made by signal.

Destroyers.

Captain (D) will detail the Destroyers for landing and keeping the ground.

Keeping the Ground.

The Ground will be kept by the following, under Command of Commander of 3rd Class Cruiser, who will make the necessary arrangements :—

(a) All Naval Rifle Range Gunnery Instructors.

(b) 3rd Class Cruiser, 2 officers 50 men.

(c) Each Battleship and 1st Class Cruiser, 10 stokers, except two Battleships who are to land 30 each.

(d) Each 2nd Class Cruiser, 5 stokers.

(e) Each 3rd Class Cruiser and T.G. Boat, 3 stokers.

(f) All Destroyers not landing with Brigade, 20 men each.

A proper proportion of P.O's are to be sent with each of above parties.

All these men will wear belts with frogs, and carry single sticks.

Disembarkation, and Embarkation.

Ships in Bighi Bay will land at the head of the harbour.

Ships in Grand Harbour to land between Calcara and Gas Works.

Ships in Dockyard and French Creeks may either march round, or land near Grain Store Point.

All ships' companies are to march out independently and form up on Marsa on arrival.

Ships' companies are to embark from the same place where they disembark.

Medical Staff.

The following medical arrangements will be made.

Surgeons of two Battleships, each accompanied by two Sick Berth Staff, 2 stretchers with bearers and water bottles.

Signalmen.

One signalman is to accompany each Battery and Battalion Commander, 3 signalmen from Flagship to be at Signal station on top of pavilion.

Each signalman is to wear a belt without frog, and carry a telescope in slings made of white line, also a pair of hand semaphore flags (No. 2 flag of clean bunting).

The following procedure will be carried out :—

	Brigade Caution.	Signal.	Remarks.
1	Brigade will come to attention.	Dip Red Flag.	
2	Brigade will shoulder.	,,	
3	Royal Salute.	,,	Present Arms as flag comes down.
4	Brigade will shoulder.	,,	

H.M. The King will then inspect the Brigade.

5	Brigade will order.	Dip Red Flag.	
6	Officers will take post.	,,	Officers will come to Recover, turn outwards and step off.
7	Brigade will fix swords.	,,	
8	Brigade will slope.	,,	
9	Brigade will March Past	,,	This is the Signal to form fours right, but Batteries and Battalions will step off by order of their Commanders.

The Brigade will then March Past and return to its original position, ordering arms and standing at ease on arriving there; swords remaining fixed.

10	Brigade will come to attention.	Dip. Red Flag.	
11	Officers will take post in Review order.	,,	
12	Brigade will shoulder.	,,	
13	Brigade will advance in Review order.	,,	Brigade will step off as the Red flag comes down.
14	Brigade will halt.	,,	Brigade will halt as Red flag comes down.
15	Royal Salute.	,,	Present arms as flag comes down.
16	Brigade will shoulder.	,,	
17	Brigade will order.	,,	
18	Brigade will give three cheers.	,,	Time being taken from Rear Admiral Commanding.
19	Brigade will shoulder.	,,	

PROGRAMME

For Lining the Streets on the Occasion of the Landing of H. M. THE KING.

Force Landed.

The Naval Brigade will consist of 3,000 Seaman and 1,000 Royal Marines under the Command of a Captain of a Battleship.

Route to be Lined.

The route to be lined is from Porta Reale, through Floriana and Portes des Bombes, to a point half way down the hill below Spencer's Monument.

Seamen and Marines Brigade.

There will be three Battalions of Seamen and one of Marines, and they will line the streets with their right towards Valletta, that is with their front facing northwards.

The Brigade will be composed as follows :—

Brigadier — Capt. in command.
Staff Officer— Lieut. (G) Battleship.

No. 1 BATTN.		No. 2 BATTN.	
Commander,	Battleship.	Commander,	Battleship.
Lieuts. (G)	Battleship.	Lieuts. (G)	Battleship.
	,,		,,
	Men.		Men.
Battleship.	200	Battleship.	213
,,	200	,,	181
,,	213	,,	232
,,	211	,,	234
2nd Cl. Cruiser.	135	,,	240
	959 Men.		1,100 Men.

No. 3 Battn.

Commander, Battleship.
Lieuts. (G) Battleship.
„

	Men.
Battleship.	211
„	260
„	257
„	213
	941 Men.

Ships which will be most conspicuous as the Royal Yacht passes, will have most men left onboard for manning ship.

As His Majesty will arrive at 10.30 in his Yacht, all seamen who are to be landed for lining the streets are to be ashore before his arrival.

No. 4 Battn. Royal Marines.

In Command. — Major.
Major of Battn. — Major.
Adjutant. — Lieut.

	Grs.	Pets.		Grs.	Ptes.
Battleship.	36	30	Battleship.	37	35
„	35	35	„	35	25
„	30	30	„	37	40
„	34	35	„	35	35
„	35	35	2nd Cl. Cruiser.		35
„	37	35	"Hibernia."		60
„	37	35	Battleship.	35	30
„	37	35	Torpedo vessel.		10
				464.	540

All Marine Officers and a proper proportion of N.C.O's will land. Any ships unable to land the required numbers of Marines to notify at once by signal to Flagship.

Each Battalion Leader is responsible for the section allotted to his battalion; these sections are marked on a chart which can be seen onboard Brigadier's ship. He will give all necessary orders as to markers, etc.

All marine buglers to land with drum and fife band, except four battleships who will be with Guard of Honour at Custom house.

Saluting.

As the procession passes, the Seamen will come to the 'Shoulder' and the Marines to the 'Slope,' and present arms by battalions, officers saluting.

Bands are to play the first verse of the National Anthem.

Dress for Guards and Brigade.

Dress for officers landed with Naval Brigade, No. 1, white gloves, no gaiters. Seamen No. 1, drill order (one pouch to be worn). Hats. No gaiters. Knife lanyards to be worn.

Commanding Officers are to give special orders that men are carefully inspected before landing, and that No. 1 suits are clean and tidy.

Marines—Review Order.

Special Guards of Honour.

A Guard of Honour of Seamen and Marines, composed as follows, will be mounted at the Custom House :—

Eight specially chosen L.S. or A.B's. from all battleships, under the command of a Lieutenant and Sub-Lieutenant of flagship. Flagship will supply petty officers.

Four gunners, R.M.A. and 4 privates, R.M.L.I. (specially chosen), from all battleships, under a Captain R.M.A. of battleship, and Lieutenant R.M.L.I. of flagship and Lieutenant R.M.A. of battleship.

Battleship to detail 1 Sergeant R.M.A.

„ to detail 1 Corporal R.M.L.I

„ to detail 1 Sergeant R.M.A. and 1 Corporal R.M.L.I.

Flagship to detail 1 Colour Sergeant.

Two flagships will each supply 50 belts, pouches, frogs and slings. Guard of Honour to be landed at Custom House by11.15 a.m.

Two specially selected P.O's 1st Class, are to be detailed from each battleship to be landed at Custom House by 11.15 a.m. for lining the covered way ; these men are to be armed with cutlasses and to wear knife lanyards. Dress, No. 1 without gaiters.

Nine of the battleships will retain onboard sufficient marines to complete the guards on the fore, and after, bridges, for manning ship when Royal Yacht passes. As

soon as Royal Yacht is secured, any marines thus kept onboard who were detailed for lining the streets, are to be sent in steamboats at once, and landed at the Gas Works.

A Guard, consisting of 20 Marines under a sergeant, is to be left on board five battleships and two 1st class cruisers, and are to parade at 11.45. a.m.

These men should be taken from wardroom servants, lamptrimmers, light dutymen, etc., who are necessarily detained onboard, the marine sentries to be relieved by stokers.

Manning Ship.

All ships are to man ship (the side nearest to the Royal Yacht) by signal as his Majesty proceeds ashore, and all saluting ships will fire a Royal Salute. All men not landed, including stokers, daymen, etc., are to be utilised for this purpose; and ships are to remain manned until procession has passed the Gas Works.

Dress for officers remaining on board.—Full dress.

Dress for men remaining on board.—No. 1 and hats.

Dress for Officers at Palace.

All Officers who are invited to the Palace, to wear full dress.

Bands.

Bands will be distributed as follows :—

Five battleship bands under chief bandmaster of flagship, at the Custom House with Guard of Honour.

Bands along route will be stationed as follows :—

Two battleships. — on right of No 1 Battalion.

, — , „ 2 „

„ — „ „ 3 „

Drums and fifes. — „ „ 4 „

The bands of two battleships and one 1st class cruiser, will remain onboard their ships, and parade with the guards when His Majesty proceeds ashore.

The bands of six battleships are not to be landed until after Royal Yacht has secured.

Disembarkation.

The Naval Brigade is to be landed by 10.30 a.m. *i.e.* before arrival of H.M. yacht, as follows :—

No. 1 Battn.—Will land to the west of the Custom House, and march up the Moat.

No 2 Battn.—To land at Calcara, and march through Calcara Gate.

No. 3 Battn.—To land the east of Ordnance Shipping shed at Marina Pinto, and march through Calcara Gate.

No 4 Battn.—(Marines). Each Unit will be landed separately, and march along Marina, and assemble on hill below Spencer's Monument.

Boats are to return to their ships after landing their parties.

Stand Easy.

Stand easy is to be delayed as much as possible, as men will not be onboard until late. Dinners are not to be ready before 1.15 p.m.

Boats for Keeping Route Clear.

30 foot cutters, as follows, under the orders of Commander of 2nd class cruiser, will be required for keeping the route clear between Royal Yacht and Custom House when His Majesty lands.

Battleship.	...	...	1	Cutter.
,,	...	...	1	,,
,,	...	...	1	,,
,,	...	...	1	,,
,,	...	...	1	,,
,,	...	...	1	,,
,,	...	...	1	,,
,,	...	...	1	,,
,,	...	...	1	,,
,,	...	...	1	,,
1st Class Cruiser.		...	1	,,
,,	...	...	1	,,
2nd Class Cruiser.		...	1	,,
,,	...	...	1	,,
,,	...	...	1	,,
Battleship.	...	...	1	,,
,,	...	...	1	,,
,,	...	...	1	,,
			18	Boats.

Each of above boats is to carry a $1\frac{3}{4}$ cwt sinker, mooring rope, and buoy.

Dress No. 1, and hats.

Officers, full dress; one midshipman to be in charge of each boat.

These boats will again be required on Saturday afternoon at Ricasoli on the occasion of laying foundation stone.

Position of Officers.

Midshipmen to be on the right of their companies in line with the front of rear rank.

Lieutenants of companies, on the road in front of their front ranks.

The Brigade will not march past, but return on board their ships as soon as His Majesty arrives at the Palace.

Medical Arrangements.

Medical staff to be stationed as follows —

(a) At Picket House—Surgeon of battleship, 2 sick berth staff, 2 stretchers with bearers, and water bottles.

(b) At Portes des Bombes—Surgeon of battleship, 2 sick berth staff and 2 stretchers with bearers, and water bottles.

Regarding Foreign Functions.— I might here observe that, contrary to what is generally understood, the Navy love to honour the genial foreigner ; and are never backward in doing their best to promote goodwill and well-being between Nations ; but to be strictly honest, the banquets are sometimes found to be rather trying, and I feel sure that most of our good friends are of the same opinion. In this respect they can speak for themselves ; but what the Anglo-Saxon suffers mostly from on these festive occasions, is the *awful* mixing of drinks ; and unless he is extremely young, or the lucky possessor of a 'Little Mary' made of cement, it indeed goes hard with him ; and the effect on some of the senior officers' tempers next day is occasionally appalling. However it is not always so bad, and the feasts are at times interesting, and often amusing—and here is an example of a Happy Family of Nations.

It was in China after the late Boxer riots of 1900 ; and I happened to be attending a banquet given by a German naval captain to the commanding officers of some seven or eight foreign detachments.

The inevitable toasts had come to an end ; coffee and cigarettes were being handed round, and by way of conversation I was telling my host that old chestnut of 'the match' which we probably all know, viz :—A Frenchman will strike a match when in company with another, and will offer it to his companion first, and use it himself after. The German will light his cigarette first and afterwards pass it to his friend. But the Englishman, he strikes the match, uses it himself, and then throws it away.

They were all laughing heartily over my effort to be funny; when a big Russian Captain (poor fellow he was killed after off Port Arthur), stood up from the bottom of the table, and in a loud strong voice exclaimed!—"Ah Captain Craydock, I like your story; but did you ever 'ear de 'istory of de kop of korfee and de fly?" I at once explained that I had not. "Very well!" he said—"I vill tell you all."

"You are sitting in a café in the boulevards of Paris, and you 'ave ordered some korfee. It is sommer time, and ven de *garçon* bring de korfee, dere is— damnation—a fly in de kop. Now, what 'appens!—De Roshian, 'e vill drink de korfee, de fly, and everytink. De German, 'e vill put in 'is thomb and take away dat fly, and then 'e vill drink de korfee. De Frenchman, 'e vill take—vat you call in England a toothpeck,—and 'e vill remove de fly, and afterward drink de korfee. But de Englishman,"—he paused.—"De Englishman, 'e vill send for anodder kop!"

Conclusion.

And now good friend you will be thinking, if you have not already said it, that it's full time you and I parted company; and as your surmise is perfectly correct, down goes my pen. As the ink dries, I will only remark, that if I in my "Whispers" have but imparted a little knowledge to some, or perhaps 'freshened the nip' for others, in the practical portion of the great Service to which we belong, it will prove a matter of more than passing satisfaction to me.

One last word:—They used to say—"All sailors growl!" But the longer I serve in the Navy, the more I marvel at the extraordinary zeal and enthusiasm displayed in its interests by officers and men, where there is neither war to encourage, nor martial glory to reward.—I think the secret lies in a nutshell. We trust our sea rulers, and we trust each other; and we know, that in spite of agitators, the former are well able to guide the Service to work out its own salvation.

Which faction is it.—The 'Blue Water,' or the 'Blue Funk School,' which is for ever writing to the newspapers to prove, that because one nation will have six and a half battleships built in three years, and another four and a quarter commenced next month; unless we immediately do *something*, we shall in ten years time, be seven-eights of a battleship behind the combined navies of the world—not forgetting that of Timbuctoo?

No!—It's not these well meant efforts that are wanted to rivet, strengthen and cement the bands of the Navy; but we require—and quickly too—some strong Imperial body of men

who will straightway choke the irrepressible utterings of a certain class of individuals who, to their shame, and for temporary notoriety—or may be personal interest—are endeavouring to break down the complete loyalty and good comradeship that now exists in the Service between the officers and men ; and are apparently also willing to commit the heinous crime of trifling with the sacred laws of Naval discipline. The thin edge of the wedge has already been entered, and may be perhaps withdrawn. But if it ever should be driven home,—believe me—one day it will split the Service ; and with the Navy's ruin, the Ship of State—through the loss of her sheet anchor—will be hurled, and hove in pieces, on the pitiless foreign shoals which for ever surround our hard won Empire.

"They have left us a kingdom none can take.—
"The realm of the rolling sea,
"To be held by the rightful sons of Blake,
"And the Rodneys yet to be."

(*Newbolt.*)

H.M.S. "Swiftsure."
1907.

(Second Edition.)

'Tis finished :—

'The Whispers from off the face of the waters have once more floated away into silence.—Change, ever change, must be the fate of the Navy ; but in the Great Book there stands for eternity the ineffable words :—

"The thing that hath been, it is that which shall be; and there is no new thing under the sun."

C.C.

H.M.S. "Half Pay."
1908.

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